Standard

Observance of Signals Manual

MD-10-109

QUEENSLAND RAIL OFFICIAL

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Policy: Safety Policy

Table of Contents

1 Purpose 3

2 Requirements of this Standard 4

2.1 Module SG 1: Signals General 4

2.2 Module SG 2: Running Signals 4

2.3 Module SG 3: Shunting Signals and Indicators 4

2.4 Module SG 4: Boards 4

2.5 Module SG 5: Defective Signals, Points, Interlocking and Track Circuiting 4

2.6 Module SG 6: Signs 4

2.7 Module SG 7: Rightaway Signals 4

2.8 Module SG 8: Rail Traffic Signals 4

2.9 Module SG 9: Rail Traffic Whistle Codes 5

3 Terms and definitions 6

4 Document History 9

5 Appendices 9

Appendix 1 – Related documents 10

1 Purpose

This standard sets the general instructions and procedures for:

- Signals
- Boards
- Signs and radio communications
- Defective signals and points
- Interlocking and track circuiting

This Standard manages the following risks:

1) Running move derailment
2) Yard derailment
3) Signal passed at danger (SPAD)
4) Collision
5) Fire or Explosion
6) Dangerous goods event
7) Level Crossing Accident

The benefits resulting from the implementation of this Standard are:

1) Management of the risks identified above
2) Assurance of compliance with QR, legislative and industry requirements
3) Financial and operational risks will be reduced to a level as low as reasonably practicable.

2 Requirements of this Standard

This Standard is divided into nine modules

2.1 Module SG 1: Signals General

This module provides an introduction to signals, boards and signs.

2.2 Module SG 2: Running Signals

This module provides the procedures required to identify, read and obey running signals.

2.3 Module SG 3: Shunting Signals and Indicators

This module gives the procedures required to identify, read and obey shunting signals and indicators.

2.4 Module SG 4: Boards

This module provides instructions and/or information conveyed by boards (other than stop boards, see section SG 2.7).

2.5 Module SG 5: Defective Signals, Points, Interlocking and Track Circuiting

This module describes actions required in the event of defective signals, points, interlocking or track detection.

2.6 Module SG 6: Signs

This module describes some signs which are used to tell rail traffic crew and other workers of particular safeworking situations, or to identify locations. This module does not attempt to cover all signs which may be used in Queensland Rail.

2.7 Module SG 7: Rightaway Signals

This module deals with the issue and receipt of rightaway signals and the procedures required in giving these signals.

2.8 Module SG 8: Rail Traffic Signals

This module deals with the signals used to identify rail traffic.

2.9 Module SG 9: Rail Traffic Whistle Codes

This module contains rail traffic whistle codes used for emergency situations, warnings, and other messages.

3 Terms and definitions

The following key terms and definitions are unique to this Standard. Please refer to the Business Glossary for other terms not included in this section.

Term	Definition	Source[1]
Bidirectional	Allowing for normal movement of rail traffic in either direction according to the infrastructure and system of Safeworking in use	
Brisbane Suburban Area	The Brisbane Suburban Area is the area bounded by Beerburrum, Shorncliffe, Pinkenba, Ferny Grove, Ipswich, Swanbank, Cleveland, Fisherman Islands, Varsity Lakes, Kippa Ring and Acacia Ridge	
Controlled Speed	Controlled speed is a speed that allows rail traffic to stop short of an obstruction within half the distance of clear line that is visible ahead	
Dangerous Goods	Those substances and items so defined in the Australian Dangerous Goods Code	
Dangerous Goods Regulations	The regulations contained in the Railways of Australia Code of Practices and Conditions for the Carriage of Dangerous Goods and in the Australian Explosive Code	
Electric Control Operator	The worker who controls the power supply to the overhead line equipment and is responsible for all switching operations and isolations of electrical equipment	
Handsignaller	A Competent Worker who gives handsignals to rail traffic crew	
Limit of Shunt Board	A board which defines the limit of shunting operations	
Non-Electrified Route	A route not equipped to supply power to electric trains	
Obstruction	Any defect in the track or track formation, or obstacle on, above or adjacent to the track which will prevent the safe passage of rail traffic	
Officer in Charge	The worker responsible for a task or situation, including a Network Control Officer, Station Master, Station Officer, Signaller, the responsible member of a Rail Traffic Crew, or a duly qualified and authorised officer of Queensland Rail	
Opposing Rail Traffic	Any rail traffic other than following rail traffic which, if it continued beyond a nominated signal, would cross over or occupy the same track as other rail traffic	
Overhead Line Equipment	The structures and overhead equipment necessary for the power supply for electric rollingstock	

[1] Where left blank, Source is not applicable

Term	Definition	Source[1]
Permit to Work	This permit is issued subsequent to the equipment being isolated and earthed. This form is a declaration signed and issued by a Nominated Person (NP) for work to be carried out on, or near to, overhead traction wiring equipment.	
Platform	A raised or level area, next to the line, that allows people to enter and leave trains	
Qualified Officer	A worker who holds current accreditation for tasks to be performed under specific safeworking systems.	
Rail Traffic	Trains and track vehicles travelling on the Network	
Rail Traffic Crew	Competent Workers controlling the movement of rail traffic	
Rail Traffic Driver	**Category 1:** A worker who is trained and accredited to drive traditional type rail traffic, for example, diesel electric locomotives, electrical multiple units, tilt trains, steam locomotives, electric locomotives and rail motors which may, or may not, be hauling rollingstock. **Category 2:** A worker who is trained and accredited to drive Rail Motors only. **Category 3:** A worker who is trained and accredited to drive either a section car, hi-rail rollingstock, or a track vehicle.	
Railway Track Signal	A device attached to a rail that explodes on impact; used to attract attention of rail traffic crews	
Restricted Speed	A speed that allows rail traffic to stop short of an obstruction within half the distance of clear line that is visible ahead; restricted speed must not exceed 25 km/h	
Siding	A portion of track, where vehicles can be placed clear of the running lines (also see intermediate siding)	
Signal	A signal is used to help make sure of the safe operation of traffic and regulate rail traffic and shunting movements	
Signal Section	A section of track between two consecutive running signals in the direction of travel	
Station	A place designated by name in the Working Timetable or by special instruction, at which rail traffic may stop for operations purposes, to cross or pass other rail traffic, shunting, or to set down or pick up passengers	
Station Yard	All tracks at a station protected by signals	
Track-circuit	An electric circuit where current is carried through the rails and used to detect the presence of trains; used in the operation and control of points and signalling equipment	
Track Vehicle	A vehicle, usually self-propelled, used for inspecting and/or maintaining infrastructure	

Term	Definition	Source[1]
Train	A locomotive or self-propelled vehicle, alone or coupled to one or more other vehicles	
Train Unit	A passenger train where the power unit/s is an integral part of the train consist	
Unidirectional	Allowing for normal travel in one direction only according to the infrastructure and system of Safeworking in use	
Worksite	The area necessary to carry out work for a specific purpose for a specified time. A worksite within three metres of the nearest rail requires protection	
Wrong Side System Failure	A failure in the signalling system which causes a potentially dangerous situation to exist. For example, if rail traffic is not detected by the signalling system, or if rail traffic is approaching and crossing a level crossing and the flashing lights and/or boom gates fail to operate, or where a PROCEED signal is displayed where a STOP signal should be displayed.	

4 Document History

Document Information

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*Contact for further information

Document Amendment History

Version	Date	Section(s) Amended	Summary of Amendment
4.1	10/06/2019	Module 7	New Section 7.4 added for Allright signal
		Module 8	Section 8.6 – Updated requirements
4.0	26/10/2018	Whole document	Transfer of content to updated SEMS template
		Module 9	Section 9.3 - Exception to the requirements for the use of train whistles at risk assessed maintenance locations.
3.1	27/08/2018	Standard	Change of legislative reference
		Module 1	Section 1.5.2 – Rail Operators replaced with Competent Workers
			Section 1.5.4 – Network Control Supervisors Actions updated

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Appendix 1 – Related documents

Legal, regulatory and other obligation sources

Jurisdiction	Title
Commonwealth	N/A
State	Rail Safety National Law (Queensland) Act 2017
Other (Voluntarily adopted by Queensland Rail)	Various Australian Standards, Codes of Practice, Memoranda of Understanding / Agreement and Government Policies are also applicable.

Queensland Rail documents

Document type	Document title
Policy	MD-10-69 Safety Policy
Principle	N/A
Strategy / Plan	N/A
Specification / Framework	N/A
Procedure	N/A

Standard

Observance of Signals Manual
Module SG 1 – Signals General

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

1 Signals General 3

1.1 Introduction 3

1.2 Types of Signals and Equipment 3

1.3 Operating Signalling Equipment 5

1.4 Control of Points by Signaller during Shunting 7

1.5 Observance of Signals 7

1.6 Aspects of Signals 13

1.8 Signal Terminology 14

1.9 Signals Not In Use 15

1.10 Irregular Signals 16

1.11 Placing Signals at Proceed 17

1.12 Rail Traffic Moving Backwards after Entering a Signalled Route 18

1.13 Passing Signals at Proceed 19

1.14 Semaphore Arms Referring to Different Tracks 20

1.15 Stopping and Delay at Signals 21

1.16 Signal Repeaters 22

1.17 Sanding of the Track in Track Circuited Areas 22

1 Signals General

1.1 Introduction

1.1.1 Purpose of module

This module provides an introduction to signals, boards and signs.

1.1.2 Safety

WARNING

The proper observance of signals is vital for the safety of workers and the general public.

Rail traffic crews and other workers are not to be satisfied with the proper observance of signals only. In addition to the observance of signals, rail traffic crews and other workers must give their attention to the condition of the track and any other factor which affects safety and/or safeworking.

1.1.3 Normal position of signals

Where a signal is capable of showing a stop aspect, the normal position of these signals will be at stop. Some signals, however, may be normally at proceed

- where they are used to protect level or tramway crossings
- where they are used to extend the limits of a station yard
- where they are non-controlled signals
- at nominated locations
- at unattended crossing stations in staff and ticket territory

1.2 Types of Signals and Equipment

1.2.1 Running signals

Signals that are mainly used to authorise running movements, but may also be used for shunting movements.

1.2.2 Shunting signals and indicators

Shunting signals regulate shunting movements in sidings, through crossover tracks or along running tracks. When a shunting signal is placed at proceed for a shunting movement it must be assumed that the section of track beyond this signal is occupied.

Indicators show the way the points are set for the route the rail traffic is to take.

1.2.3 Boards

Boards are used to give rail traffic crew and other workers instructions necessary for the running of rail traffic. They must be obeyed, the same as signals.

1.2.4 Signs

Signs are used to tell rail traffic crews and other workers of particular safeworking situations, particular instructions, or to identify locations.

1.2.5 Hand, hand held flag and light signals and radio communication

Hand, hand held flag and light signals and radio communication are used when

- there are no other appropriate signals
- an additional signal is required
- necessary to give rightaway
- a specific instruction needs to be given
- an emergency exists

1.2.6 Rail Traffic signals

Rail Traffic signals are used to

- indicate the front and rear of rail traffic
- indicate rail traffic is complete

1.2.7 Whistle codes

Whistle codes are used to

- warn workers and members of the public
- convey messages
- warn of an emergency

1.2.8 Railway Track Signals

Railway Track signals are used as

- warning devices
- emergency signals
- protection

1.2.9 Emergency signals and equipment

Various signals and equipment may be used in an emergency. These include

- railway track signals
- radios
- hand, hand held, flag and light signals
- train whistle
- bell signals
- flashing headlight
- airbrake
- track circuit clips

1.3 Operating Signalling Equipment

1.3.1 Care and working of signalling equipment

All workers responsible for the operation of signalling equipment will

- make sure equipment is used in the correct manner
- make sure all traffic movements are protected by signals, where provided
- not allow unqualified, unauthorised workers to operate the equipment
- make sure all signalling equipment is in proper working order
- report any failure of signalling equipment
- make sure manually controlled signals are returned to their normal position as soon as a rail traffic has passed
- make sure signals and points respond to operation by observing signals, points or indications provided

1.3.2 Stop signals to be shown in case of obstruction

When a track becomes obstructed

Officer in Charge

- place signals at stop
- block the section or place collars over levers or switches
- tell Network Control Officer and officer in charge on both sides of the obstruction
- do not clear signals to the obstructed track, or unblock the section, until clearance of the obstruction is confirmed

1.3.3 Mechanically interlocked signals to be placed at stop after rail traffic has passed

a) after rail traffic passes a signal at proceed

When the whole of the consist has passed the signal at proceed

Officer in Charge

- place the signal at stop after the whole of the consist has cleared any points interlocked with the signal

b) rail traffic cannot be brought inside a home signal

When rail traffic cannot be brought completely inside a home signal or clear of the facing points

Officer in Charge

- place the home signal in the stop position to assist in the protection of the rail traffic

1.3.4 Restoring of signals

When a signal has been cleared for rail traffic to proceed and it is necessary for the signal to be placed at stop before the rail traffic has passed it

Officer in Charge

- if possible, tell the rail traffic crew by radio the signal is to be placed at stop
- make sure the rail traffic has stopped at the signal before clearing signals for other rail traffic on conflicting routes

1.3.5 Placing collars on signal levers

At stations where the points and signals are interlocked and rail traffic has been admitted to a track

Officer in Charge

- place collars on signal levers or apply blocking facilities
- keep collars or blocking facilities in position until the track is clear

1.4 Control of Points by Signaller during Shunting

1.4.1 Shunting over points controlled by Signaller

When carrying out shunting operations where the points are controlled by a signaller

Shunting Staff

- make sure all rail traffic and rail vehicles are clear of points
- make sure all points, catchpoints, choke blocks and derailers are properly set for the intended movement before giving a signal to the rail traffic crew
- carry out shunting in conjunction with the signaller

1.4.2 Signallers moving points during shunting operations

When points to be operated cannot be seen by the signaller during shunting operations

Signaller

- obtain a signal from the rail traffic crew or shunter before moving the points
- check last rail vehicle or locomotive is clear before resetting the points

Note: The signaller may obtain a clearance indication from a track circuit indicator.

1.5 Observance of Signals

WARNING

Rail traffic must not pass signals at stop without authority.

1.5.1 Authority to pass a signal at stop

The authority to pass a signal at stop can only be given by the worker who controls the signal section into which the movement is to be authorised or by validated instructions attached to the signal or in accordance with instructions for the safeworking system.

Rail traffic can only pass a signal at stop when authorised by;

- network control officer or the person in charge of a panel that controls the signal section into which the movement is to be authorised, or
- validated instructions attached to the signal, or
- rail traffic driver to pass a signal fitted with an SP plate, or
- down home signal in Staff and Ticket Territory

1.5.2 Responsibility of workers

Where the observance and obeyance of signals is part of a worker's duty

Workers

- do not allow any other duty to interfere with the observance of signals
- pay strict attention to, and obey, all signals
- keep signal in view of at least one member of rail traffic crew until the signal aspect is no longer visible
- clearly tell others concerned the aspect of signals
- if there is no agreement on the aspect of the signal the rail traffic driver will
  - make sure the correct signal is being called
  - repeat the signal call
  - stop the rail traffic if it is still unclear which is the correct indication
- if after stopping the indication of the signal is unclear, for example, sun shining on the lens, contact the Network Control Officer or Officer In Charge to confirm the signal indication
- do not move away from the driving station to check the signal indication while the rail traffic is moving
- take extra care when visibility is reduced
- look out for additional signals

Note: Rail traffic crews must call the aspects of signals to other members of the rail traffic crew travelling in the cab of a locomotive/train unit.

Note: Competent workers, who are qualified in observance of signals, must call the aspects of signals to members of the rail traffic crew when travelling in the cab of a locomotive/train unit.

1.5.3 Failure to obey signals

When a rail traffic driver fails to obey a signal, or does not respond to a call of a signal by the second rail traffic driver or a rail traffic driver's assistant

Second Rail Traffic Driver or Rail Traffic Driver's Assistant

- if there is enough time to stop the rail traffic prior to the signal
  - make every effort to draw the rail traffic driver's attention to the aspect of the signal
- if there is not enough time to stop the rail traffic prior to the signal
  - apply the emergency brake or open the emergency cock

1.5.4 Passing signals at stop without authority

WARNING

Rail traffic must not pass signals at stop without authority.

Rail Traffic Driver immediate actions

If for any reason, rail traffic passes a signal showing a stop aspect without authority, or passes any other limit of safe working authority:

- bring the rail traffic to a stop immediately in the first safe location
- secure the rail traffic against movement
- warn any other rail traffic in the vicinity using the emergency call 'Emergency, Emergency, Emergency'
- If necessary, protect the rail traffic
- contact the Network Control Officer on the radio and say 'Emergency, Emergency, Emergency'
- identify the rail traffic to the Network Control Officer and the location by both rail section and by giving the number of the nearest OHLE structure, mast or kilometre board/marker
- do not move the rail traffic without specific authority from the Network Control Officer or Signaller, unless there is a danger of an accident
- ensure the radio remains on and await further instructions from the Network Control Officer

If the signal or local safeworking system is managed by a person other than a Network Control Officer, (i.e. the Officer in Charge e.g. Local Control Panel Operator, Signaller or Shunter), the emergency should also be reported to the Network Control Officer who will advise the relevant Operations Manager for the area.

If a SPAD occurs in a depot, worksite, yard it should be reported and investigated in the same manner as for a running line SPAD (Refer: Management of SPADs).

Network Control Officer Actions

If a prompt or alarm has been received that rail traffic may have passed a signal at stop:

- immediately broadcast an emergency message to the rail traffic crew instructing the rail traffic driver to stop
- broadcast an emergency message to the rail traffic crew of other rail traffic that may be in danger'
- take any action necessary to protect rail traffic and any workers working on the track

- ask rail traffic drivers of all rail traffic in that area to confirm their location
- if necessary, tell the Officer in Charge of the signal
- report the SPAD to the Supervisor of the Network Control Centre
- ask rail traffic driver of the SPAD rail traffic, what aspect was displayed by the signal and how far passed the signal the rail traffic has travelled
- if it is suspected the aspect was not red, tell the Trackside Systems Fault Coordinator and treat as a suspected Wrong Side Signal Failure, and refer to module EP1-14 'Wrong Side Signal Failure'
- ask the rail traffic crew what safeworking authority is held
- make an assessment of the rail traffic crew's ability to continue driving the rail traffic
  - how are you feeling?
  - has the emergency shaken or affected you in any way?
  - how do you feel about continuing on driving?
- if the Network Control Officer is unsure of the ability of the rail traffic crew to continue working, advise the Supervisor of the Network Centre (who will liaise with the Railway Operator) the Railway Operator will decide if:
  - the rail traffic crew can continue
  - the rail traffic crew can continue but relief is to be arranged as soon as possible
  - an additional responsible operational employee is required when the rail traffic is worked under Driver Only Operation
  - the rail traffic crew is to be relieved immediately
- implement the Railway Operator's decision
- make the next arrangements for the rail traffic from one of the following actions:
  - hold the rail traffic until the status of the signal equipment is gathered
  - Issue Alternative Proceed Authority to set back to the approach side of the signal, then give a signal to proceed
  - Issue Alternative Proceed Authority for the rail traffic to proceed forward

Warning:

The Network Control Officer must not alter the status of points or signalling until all rail traffic has been stopped and location has been confirmed

Supervisor of the Network Control Centre's Actions:

- assess the information provided by the Network Control Officer
- check the position of rail traffic in the area, and where possible note the display on the UTC screen or panel
- when appropriate, notify the Network Control Manager who will advise relevant Queensland Rail managers

- arrange the investigation Team Members (Refer SPAD Investigation Summary Form 10724)
- notify the Incident Response Coordinators for the affected Operator's
- notify other workers as appropriate: (Refer to - Accident and Incident Reporting, Recording and Investigation)
  - Manager Signals and Operations Systems
  - Staff Counsellor
  - Corporate Affairs Unit (including resulting change to rail services for public information)
- within 30 minutes of the SPAD, send text message to Queensland Rail Management if it is a Category 1 or 2 SPAD (Refer to Management of SPADs)
- notify the Rail Safety Regulator by verbal advice initially, then on the prescribed form, electronically
- notify Queensland Rail's Risk Unit on the prescribed form, electronically
- notify the Division of Workplace Health and Safety on the prescribed form, electronically, if the SPAD:
  - Involves worker serious injury, work caused illness or worker death
  - Involves public, passenger or trespasser serious injury or death
  - Is a dangerous event, that is an event at a work place involving imminent risk of explosion, fire or serious bodily injury
- notify Queensland Rail's Legal Services Division on the prescribed form, electronically, if required.

1.5.5 Rail Traffic Driver cannot observe the signal

When rail traffic stops in a position and the rail traffic driver cannot observe the signal. The rail traffic driver must confirm the aspect of the signal before proceeding.

Rail Traffic Driver

- confirm the aspect of the signal with a qualified worker

Qualified Worker

- maintain communication with the rail traffic driver
- be in a position to clearly observe the signal until the rail traffic passes the signal

Rail Traffic Driver

- if a qualified worker is not in a position to observe the signal, then
- tell the Network Control Officer / Officer in Charge

Network Control Officer / Officer in Charge

- check
  - the train diagram
  - the UTC screen / mimic board
- tell the rail traffic driver
  - if the section is clear or not clear
  - the indication of the UTC screen / mimic board

Note: If the aspect of the signal cannot be confirmed, the Network Control Officer may wish to place the signal at stop and issue an Alternative Proceed Authority for the rail traffic to proceed.

1.6 Aspects of Signals

The aspects and indications of semaphore and colour light signals are as shown in Figure SG 1.1.

Figure SG 1.1 Aspects of Signals

	GREEN	—	**PROCEED**
	FLASHING GREEN	—	**PROCEED**. Indicates a change from RCS to another safeworking system. Proceed, provided the appropriate safeworking authority is held.
	DOUBLE YELLOW	—	**CAUTION**. Proceed prepared to find the next signal at caution.
	YELLOW	—	**CAUTION**. Expect the next signal to be at STOP. Proceed, prepare to STOP prior to the next signal.
	FLASHING YELLOW	—	**SPECIAL CAUTION**. Proceed to the next STOP signal at a speed not exceeding 40 km/h, where: • points beyond the next Stop Signal must be assumed to be set against the rail traffic, and/or the track beyond the next Stop Signal is occupied • a shunting movement is being carried out on an adjacent line, or • level crossing protection has not been activated
	RED	—	**STOP**
	TWO WHITE	—	**PROCEED**
	WHITE and RED	—	**STOP**
	Reflectorised semaphore arm in the horizontal position	—	**STOP**
	Reflectorised semaphore arm at 45 degrees	—	**PROCEED**

1.7 Back of Signals

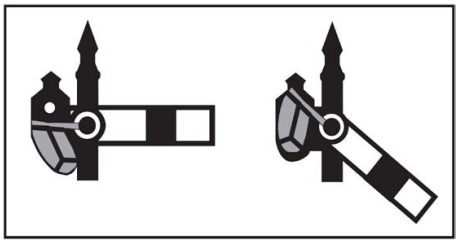
1.7.1 Authority of back of signals

The back of semaphore and colour light signals does not give authority to any rail traffic.

1.7.2 Back of semaphore signals

The back of a semaphore signal is

- white, with a black vertical stripe, and
- when lit, shows a white backlight when the signal is in the stop position



1.8 Signal Terminology

1.8.1 Approach side of signal

When on the 'Approach side' of a signal, the worker must be looking in the direction of and able to see the aspect of the signal or the block limit board number.

'Approach side' of a signal

'Approach side' of a block limit board

1.8.2 Departure side of signal

When on the 'Departure side' of a signal, the worker, when looking at the signal, can only see the back of it (cannot see the aspect of the signal or the block limit board number).

'Departure side' of a Signal

'Departure side' of a Block Limit Board

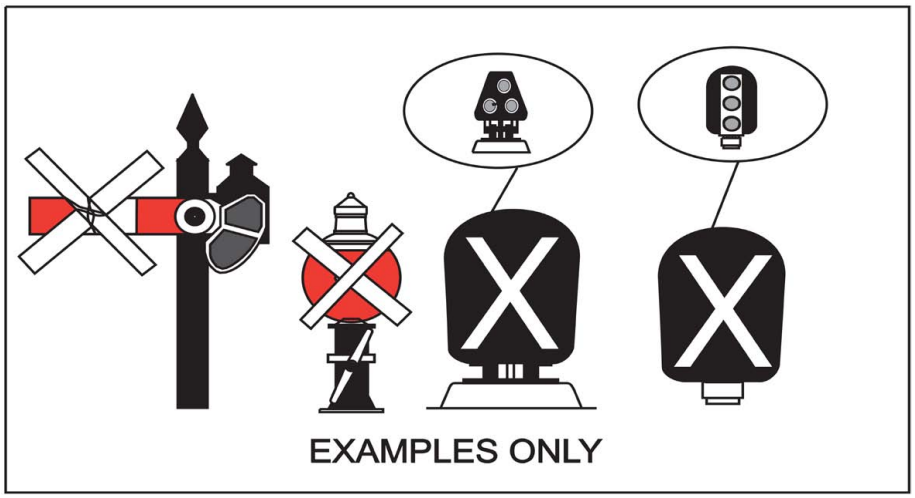
1.9 Signals Not In Use

When signals are not in use they will be identified by

- a white cross attached to the front of semaphore signals and points indicators

Note: Lamps are to be removed.

- a cover placed over the signal lights with a white cross showing to the front on all other signals



1.10 Irregular Signals

An irregular signal is one which displays

- a white light where normally a colour light is shown
- more than one proceed signal is displayed where only one should be shown
- no signal where a signal is normally seen (blackout signal)
- a signal for a route on which the rail traffic would not normally run
- a semaphore signal not in a horizontal or 45° position
- conflicting aspects
- a position light signal displaying the lower white light only

Worker observing a defective signal

- treat an irregular signal as a signal at STOP, except for
  - repeat signals
  - approach signals
  - semaphore signal arm indications which can be clearly seen, can be obeyed when no light is showing
- report to the Network Control Officer
  - signal number and location
  - type of defect
  - any signal that is dull or poorly focussed
  - reflectorisation that has become ineffective
  - any signal that is obstructed (example: by trees)

Network Control Officer

- carry out procedures for reporting signal failure and make arrangements for the signal to be repaired
- issue an Authority for passing a signal at stop, if required
- tell all approaching rail traffic of the defective signal

Rail Traffic Crew

- approach defective signal at controlled speed and prepare to stop

Worker carrying out repairs on a signal that will have an effect on the running of rail traffic

Worker before carrying out repairs to the signal

- tell Network Control Officer
  - the condition of the signal
  - effects on other safety devices (example: whether level crossing protection is still operating)
  - length of time until repairs are completed, if possible
- obtain authority from Network Control Officer to start work on the signal
- after repairs have been carried out, tell Network Control Officer the condition of the signal (e.g.: signal working normally, the signal has limited capacity or signal requires further repairs)

1.11 Placing Signals at Proceed

When placing a signal at proceed for the passage of rail traffic

Network Control Officer/Officer in Charge

- make sure the points for the rail traffic are correctly set and locked (locked if possible)
- make sure it is safe for the rail traffic to proceed
- avoid delaying the rail traffic
- authorise the rail traffic to enter the station when the rail traffic arrives at the home signal by,

Unoccupied Mainline

  - placing the home signal at proceed to allow the rail traffic to enter the unoccupied mainline

Occupied Mainline or Any Other Road

  - leaving the home signal at stop and authorising the rail traffic to pass the home signal at stop by using a hand, flag or radio communication signal
- make sure controlled signals are returned to stop as soon as the rail traffic has passed the signal

Note: Where route setting is provided, the setting of points and signals is automatically set up with the route.

1.12 Rail Traffic Moving Backwards after Entering a Signalled Route

The signalling system in Remote Controlled Signalling (RCS) areas is designed to release the locking on points as soon as the rear of the rail traffic has cleared. These points may then be altered for the movement of other rail traffic or may be self-normalising. The following procedure shown in Sections SG 1.12.1 and SG 1.12.2 must be carried out to prevent a possible derailment or collision.

1.12.1 Rail traffic moving backwards after entering a signalled route

When rail traffic has entered a signalled route on the authority of a signal and it is necessary to reverse direction

Rail Traffic Crew

- do not reverse until authorised by Network Control Officer
- contact Network Control Officer/Officer in Charge
- when possible, move the rail traffic forward until a signal may be placed at proceed for the reverse movement

Network Control Officer/Officer in Charge

- make sure route for the reverse movement is clear
- set and lock points
- where possible, clear the signal
- authorise the rail traffic crew to reverse

1.12.2 Rail traffic moving backwards after entering a signalled route and then moving forward

When rail traffic moves forward on the authority of a signal and reverses, and is then required to move forward again

Rail Traffic Crew

- when possible, move the rail traffic in clear of a signal which applies for the forward movement
- when not possible to clear the signal for the forward movement
  - contact the Officer in Charge to make sure the route for the forward movement is clear and points are locked
  - obtain authority from the Network Control Officer/Officer in Charge to proceed

Network Control Officer/Officer in Charge

- make sure route for the forward movement is clear
- set and lock points
- where possible, place the signal at proceed
- authorise the rail traffic crew to proceed

1.13 Passing Signals at Proceed

When rail traffic has stopped and the rail traffic driver cannot see the signal, the rail traffic driver must confirm the aspect of the signal before proceeding past the signal.

Rail Traffic Driver

- confirm the aspect of the signal with a qualified worker who is in a position to clearly see the signal
- the qualified worker must observe the aspect of the signal until the rail traffic passes the signal
- if a qualified worker is not in a position to see the signal, then
- ask the Network Control Officer

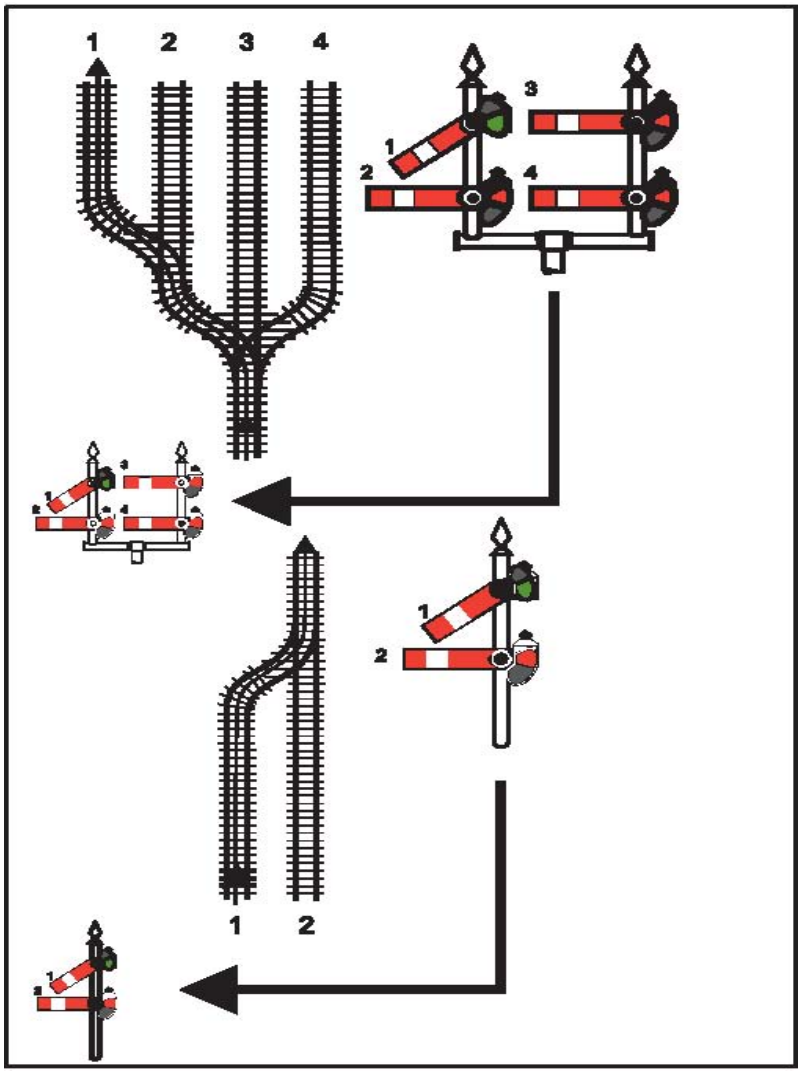
Warning: If a passenger train overshoots a stopping place with a signal at proceed and the train has to setback, procedures in the Remote Controlled Signalling Manual RC 5.10 Passenger Train Overshooting or Stopping Short of a Platform, must be followed.

Network Control Officer

- check the train diagram
- check UTC screen
- tell the rail traffic driver
  - if the section is clear or not clear
  - the indication of the mimic board

1.14 Semaphore Arms Referring to Different Tracks

Description	• more than one semaphore arm on the one post
Location	• where one or more tracks branch from or join the main line, or run parallel with each other
Purpose	• to indicate the track on which rail traffic is to proceed



1.14.1 Reading semaphore arms referring to different tracks

When reading semaphore arms which refer to different tracks

Rail Traffic Crew

- read from the left-hand side, top to bottom, and then right hand side, top to bottom
- read the first signal for the track farthest to the left, the last signal read is for the track farthest from the left

Note: If arms are fitted with an ‘S’ or ‘O’ they apply to a shunting movement, or to a loop line or siding.

1.15 Stopping and Delay at Signals

1.15.1 Stopping at signals

When it is necessary to stop rail traffic at a signal

Rail Traffic Crew

- bring the rail traffic well up to the signal, where practicable
- make sure the signal is kept in view by at least one member of the rail traffic crew
- do not allow any part of the rail traffic to pass the signal
- where possible, avoid stopping rail traffic on bridges, in tunnels or over level crossings

Note: Some signals are 'approach cleared' and the signal may not clear until the rail traffic is brought well up to the signal.

1.15.2 Delay at signals

a) communication available

When rail traffic is delayed at a signal and radio or telephone communication is available

Rail Traffic Crew

- contact Officer in Charge immediately

b) no communication available

When rail traffic is delayed at a signal and there is no radio or telephone communication available

Rail Traffic Crew

- use any other means to contact Officer in Charge

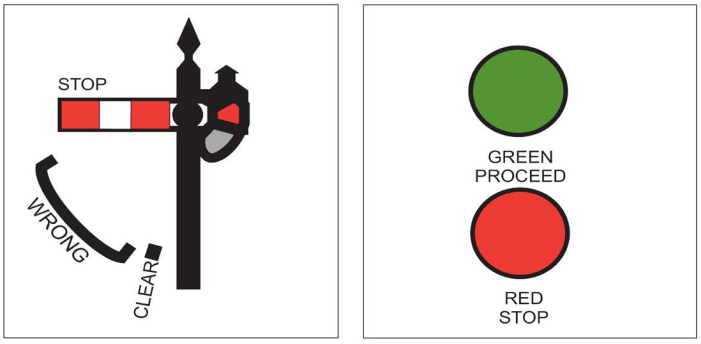
1.16 Signal Repeaters

When the aspect of a controlled signal cannot be seen from where the signal is controlled, a Signal Repeater, which mimics the aspect of the signal, will be provided.

When the signal repeater is in the wrong position, or when the signal repeater shows no light, it is to be treated as an irregular signal in the field.

Note: A green aspect in the electric light type indicator, indicates the signal it is repeating, is showing a proceed aspect

Example of Signal Repeaters



1.17 Sanding of the Track in Track Circuited Areas

Excessive use of sand must be avoided at all times. Excessive sanding can create a build-up of sand between the rails and wheels of rail traffic. Under these circumstances rail traffic may not be detected by track circuits.

When driving locomotives only or lightly loaded rail traffic, sand must be used sparingly to prevent wheel slip.

Standard

Observance of Signals Manual
Module SG 2 – Running Signals

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

2 Signals General 3

2.1 Introduction 3

2.2 Semaphore Signals 3

2.3 Colour light signals 4

2.4 Starting Signals – Non RCS Territory 6

2.5 Home Signals – Non RCS Territory 7

2.6 Station Yard Extension Signals – Non RCS Territory 8

2.7 Stop Boards 8

2.8 Repeat Signal 9

2.9 Approach Signals and Approach Beacons 10

2.10 Approach Warning Beacons 11

2.11 Junction Indicators 11

2.12 Route Indicators 13

2.13 Tonnage Signal 14

2 Signals General

2.1 Introduction

2.1.1 Purpose of module

This module provides the procedures required to identify, read and obey running signals.

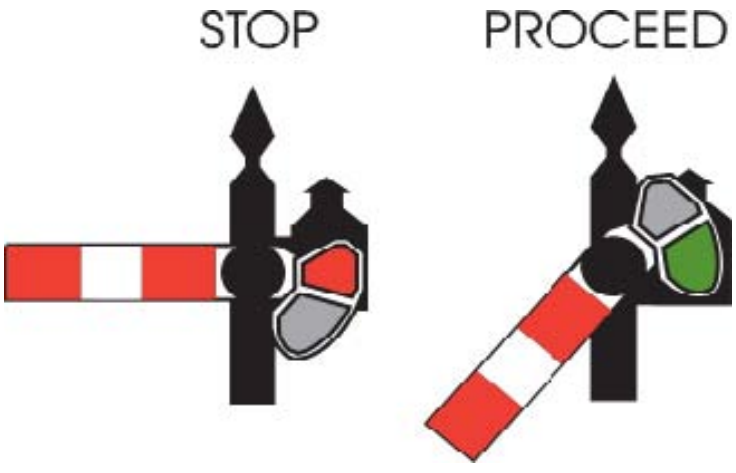
2.1.2 Section Information

Where necessary each signal is given

- a description (written and/or graphic), location and purpose
- working procedures under an Indications and Working section, and
- exceptions to the normal procedures under separate sections

2.2 Semaphore Signals

Description	• a signal capable of showing a stop or proceed aspect • semaphore signals may be altered to be used as shunting signals, or siding signals, or calling on signals
Location	• at various locations throughout the Queensland Network
Purpose	• to indicate to the rail traffic driver travelling under rail traffic working regulations, whether to stop or proceed. Signals may vary according to the particular use of the signal.



2.2.1 Indications and working

Semaphore signal aspects show

- by day
  - stop, the arm in a horizontal position
  - proceed, the arm lowered at 45°
- by night
  - stop, the arm in a horizontal position and, where provided, a red light
  - proceed, the arm lowered at 45° and, where provided, a green light

Note: Where the semaphore arm indications can be clearly seen, the signal can be obeyed when no light is showing.

2.3 Colour light signals

Description	• a signal which displays a STOP or PROCEED authority by the lighting of coloured aspects only (see Figure SG 2.1)
Location	• at various locations throughout the Queensland Network
Purpose	• to indicate to the rail traffic driver travelling under rail traffic working regulations, whether to stop or proceed

2.3.1 Aspects of colour light signals

Colour Light Signals can be of single, two, three or four aspects (see Figure SG 2.1).

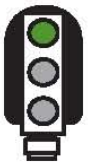
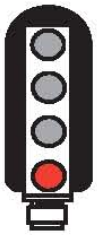
a) Single aspect
- red, permanent stop, or permanent stop with position light signal attached
- yellow, permanent caution

b) Two aspect
- displays
  - green or red
  - yellow or red
  - green or yellow, used as a repeat or approach signal

c) Three aspect
- displays
  - green, or yellow, or red

d) Four aspect
- displays
  - green, or yellow, or double yellow or red

Figure SG 2.1 Colour Light Signals

Colour/ Aspect	Red	Yellow	Double Yellow	Green
Meaning	Stop	Expect the next signal to be at STOP. Proceed with Caution, prepare to STOP prior to the next signal.	Proceed with Caution prepared to find next signal at CAUTION	Proceed
Variations		**FLASHING YELLOW** Special Caution - Proceed to the next Stop Signal at a speed not exceeding 40 km/h		**FLASHING GREEN** Proceed if Safeworking Authority is held
Single				
Two				
Three				
Four				

2.3.2 Colour light signals – non-controlled and controlled

a) **non-controlled signals**

Non-controlled signals work by the detection of traffic over track circuiting and are not normally manually controlled. Some non-controlled signals can be operated manually. For example,

- shunting purposes at level crossings
- worksite protection

b) **controlled signals**

Controlled signals may be controlled by the Officer in Charge. Some controlled signals are capable of being placed in non-controlled working by the Officer in Charge.

2.3.3 Passing non-controlled and controlled signals at stop

a) **passing non-controlled signals at stop**

Non-controlled signals may be passed at stop on the authority of the Network Control Officer/Officer in Charge in accordance with instructions for the safeworking system.

b) **passing controlled signals at stop**

Controlled signals may be passed at stop on the

- authority of the Officer in Charge
- authority of a signal attached to the controlled signal
- authority of the Officer in Charge using a hand signal, hand held flag, light or radio in non-RCS territory

2.4 Starting Signals – Non RCS Territory

Description	• a semaphore signal, or • a colour light signal
Location	• at the entrance to a section in non RCS territory
Purpose	• to control the movement of rail traffic into a section between two stations, or • to control the movement of rail traffic to another starting signal

2.4.1 Passing at stop

Starting signals may be passed at stop

- on the authority of a signal attached to the starting signal
- at unattended staff stations in the down direction, provided the rail traffic crew has the authority to enter the section
- on authority of the Officer in Charge by hand, hand held, flag, light or radio signal

2.5 Home Signals – Non RCS Territory

Description	• a semaphore signal, or • a colour light signal
Location	• at entrances to station yards in non RCS territory
Purpose	• to control the entrance of rail traffic into a station yard • to mark the limit of a station yard • to protect shunting operations

2.5.1 Stopping of through rail traffic

When necessary to stop rail traffic not timed to stop at a station

Officer in Charge

- tell rail traffic crew by radio, if possible
- make sure the rail traffic is stopped or nearly stopped at the home signal before placing this signal at proceed

Rail Traffic Crew

- proceed at restricted speed when the home signal is placed at proceed and prepare to stop as directed by the Officer in Charge

2.5.2 Passing at stop

Home signals may be passed at stop

- on the authority of a signal attached to the home signal
- on the authority of the Officer in Charge by hand, hand held, flag, light or radio signal
- by down rail traffic at unattended staff stations in staff and ticket territory

Officer in Charge

- tell rail traffic crew
  - the track to enter
  - whether the track is occupied
  - how far to proceed

2.6 Station Yard Extension Signals – Non RCS Territory

Description
- a semaphore signal, or
- a colour light signal

Location
- in non RCS territory

Purpose
- to extend the limits of station yards for shunting purposes

2.6.1 Indications and working

a) **normal position of signals**

The normal position of these signals is at proceed.

b) **shunting outside a home signal**

When rail traffic is required to shunt outside a home signal

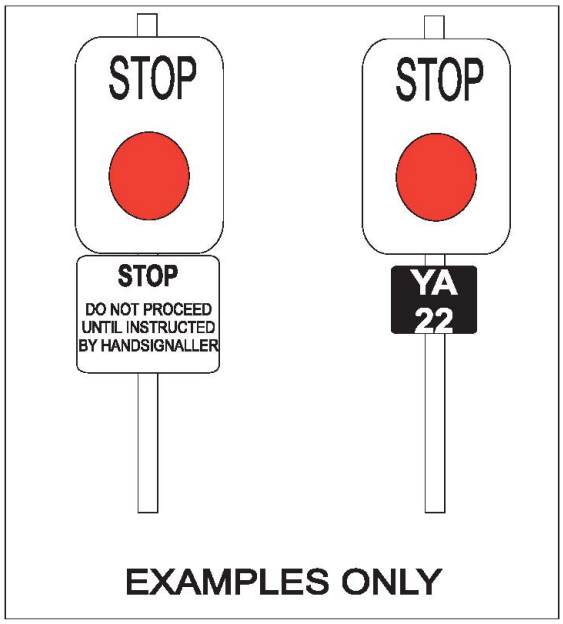
Officer in Charge

- check location of any opposing rail traffic
- place the yard extension signal at stop before the shunt movement passes the home signal
- do not place the yard extension signal at proceed until the shunt movement has returned inside the home signal

2.7 Stop Boards

Location
- at various locations throughout the Queensland Network

Purpose
- to stop rail traffic to receive instructions



2.7.1 Indications and working

a) **authority of stop boards**

A Stop Board is a running signal at STOP. At some locations an additional board is attached identifying the Officer in Charge.

b) **passing stop boards with no instructions attached**

Authority to pass stop boards will be in accordance with the procedures for passing a running signal at stop, as defined by the safeworking system applicable to the area in which the board is located.

c) **passing stop boards with instructions attached**

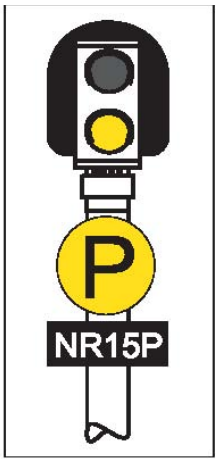
When rail traffic approaches a stop board with instructions attached

Rail Traffic Crew

- be prepared to stop at the stop board
- carry out instructions
- if instructions cannot be carried out
  - do not proceed
  - contact Officer in Charge
- obtain authority to pass stop board before proceeding

2.8 Repeat Signal

Description	• a two aspect colour light signal • identified by a large attached ‘P’ plate
Location	• on the approach side of a signal which has a restricted view
Purpose	• provide rail traffic crews with an indication that the signal being repeated is either at stop or proceed



Note: Rail traffic drivers should be aware these signals are not placed at braking distances.

2.8.1 Indications and working

When the signal shows

- a green aspect
  - the next signal shows a proceed aspect
- a yellow aspect
  - be prepared to find the next signal at stop, proceed and prepare to stop prior to the next signal
- a flashing yellow aspect
  - be prepared to find the next signal at stop, proceed at a maximum speed of 40 km/h and prepare to stop prior to the next signal, because
  - the overlap beyond the next signal is occupied and/or,
  - the points beyond the next signal are set against the passage of the rail traffic, or
  - level crossing protection has not been activated

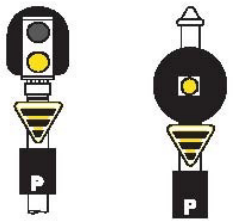
Note: When a Repeat Signal is a blackout, rail traffic may proceed and prepare to find the signal being repeated at stop.

2.9 Approach Signals and Approach Beacons

Description
- one or two aspect colour light signals identified by a small reflectorised beacon attached to the signal post
- an approach beacon

Location
- generally at braking distance from the next stop signal or yard limit board

Purpose
- to warn rail traffic crews they are approaching a signal which may be at stop, or a yard limit board

Meaning	Colour Light	Approach Beacon	Next Stop Signal in Advance
PROCEED			At PROCEED
CAUTION			Expect to find at STOP

2.9.1 Indications and working

a) **approach signal**

When the signal shows

- a yellow aspect
  - expect the next signal to be at stop, proceed , prepare to stop prior to the next signal
- a flashing yellow aspect
  - the next signal is at stop, proceed to the next stop signal at a speed not exceeding 40 km/h
- a green aspect
  - the next signal shows a proceed aspect

Note: When an Approach Signal does not show an aspect, rail traffic may proceed and prepare to find the next signal at stop.

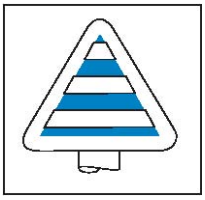
b) **approach beacon**

An Approach Beacon indicates the next stop signal in advance may be at stop.

2.10 Approach Warning Beacons

Location
- placed between 200 metres and 400 metres from the approach signal and must be within sight of this signal

Purpose
- to minimise heavy braking of long rail traffic, for example coal trains



2.10.1 Indications and working

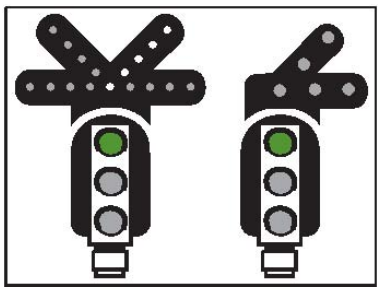
The Approach Warning Beacon alerts the rail traffic driver to observe the aspect of the Approach Signal.

2.11 Junction Indicators

Description
- consist of three or five lunar (near white) lights attached at an angle to the top of the main signal, or a position light signal

Location
- above signals before turnout tracks

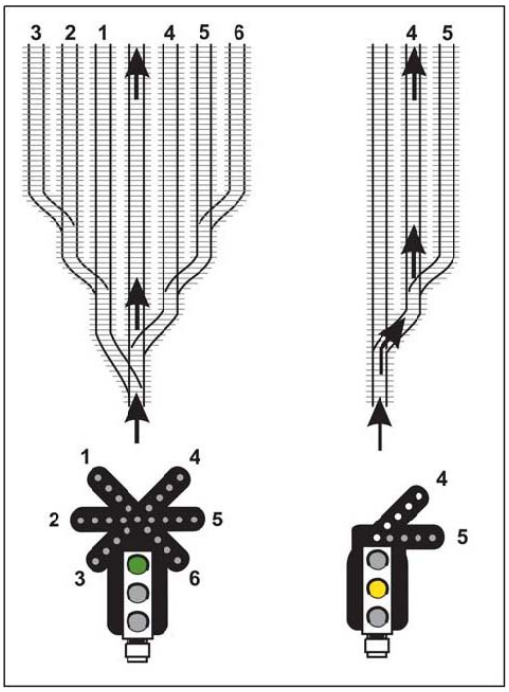
Purpose
- to identify the route over which the rail traffic will proceed



2.11.1 Reading junction indicators

There may be up to six Junction Indicators attached at an angle to the top of the main signal.

The routes are read from the left in a clockwise direction.



2.11.2 Indications and working

When more than half the lunar lights of an indicator are lit and the main signal shows a proceed aspect, proceed on the track indicated.

When less than half the lunar lights of an indicator are lit, the system will failsafe and the main signal will show a stop aspect.

Provision of green Aspect with Junction Indicator

A signal cleared to yellow with a junction indicator may clear to green when the rail traffic is on the approach to the signal. This will only occur when the next stop signal is cleared to proceed.

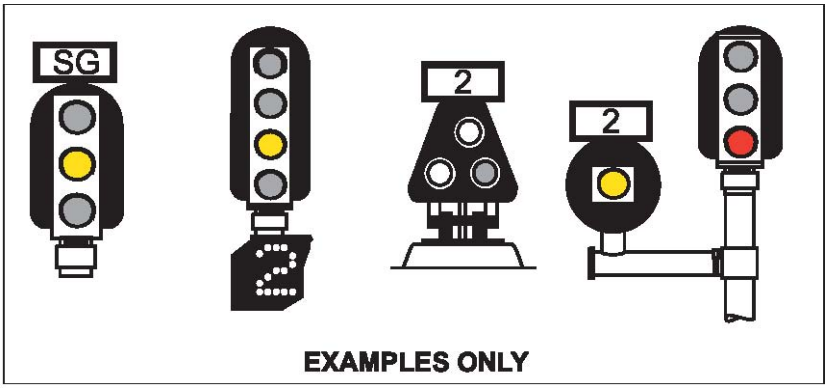
2.11.3 Reporting defective lunar lights

When rail traffic crew notice any lunar lights not working, tell the Officer in Charge.

2.12 Route Indicators

Location
- attached to colour light signals, siding signals, and position light signals prior to turnout tracks

Purpose
- to identify the route over which the rail traffic will proceed, by numbers or letters in conjunction with a proceed aspect in the signal



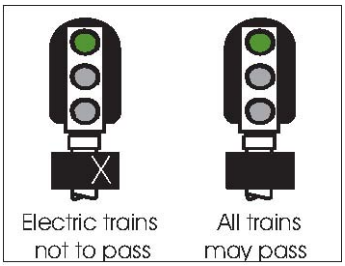
2.12.1 Indications and Working

If the signal displays a STOP aspect, it must be treated as STOP, regardless of the indication of the Route Indicator.

2.12.2 Non-electrified route indicator

Location
- attached to some colour light signals or position light signals in electrified areas

Purpose
- to indicate whether or not the route set is wired for electric trains



2.12.3 Indications and Working

a) **cross displayed – signal at proceed**

If the cross is displayed, electric trains must not pass the signal, except where local instructions allow the locomotive/s to pass the signal for shunting purposes only.

b) **cross not displayed – signal at proceed**

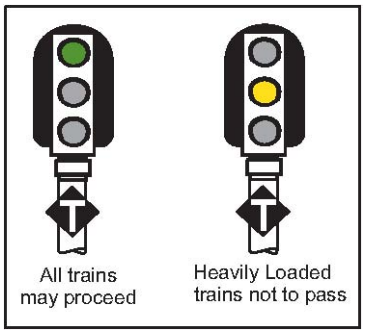
If the cross is not displayed, all rail traffic may pass the signal.

2.13 Tonnage Signal

a) **tonnage sign fixed to signal post**

Location
- before steep ascending or descending grades

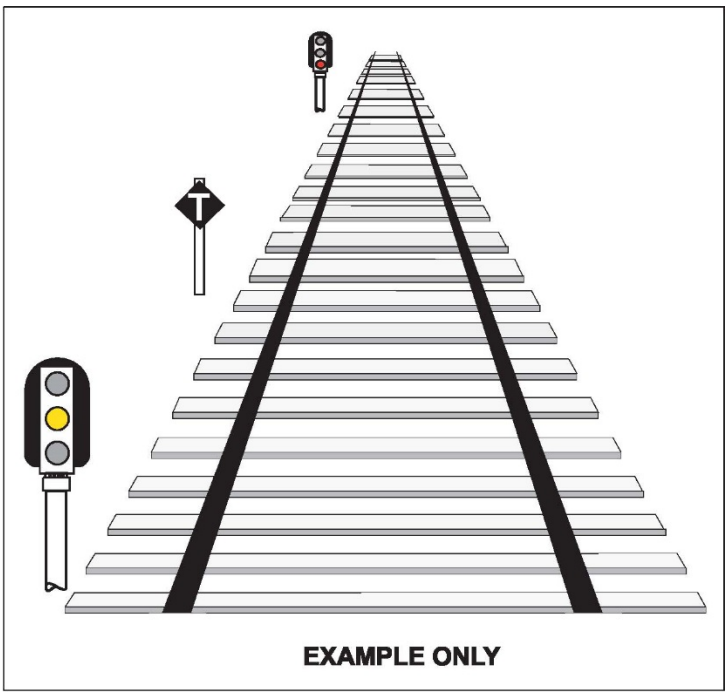
Purpose
- to indicate heavily loaded rail traffic is not to proceed past the signal unless a proceed authority is available for the next section in advance
- to prevent heavily loaded rail traffic being stopped at a signal on ascending or descending grades



b) **tonnage sign separately mounted**

Location
- before steep ascending or descending grades

Purpose
- to indicate to heavily loaded rail traffic when approaching the signal showing a caution aspect, the rail traffic will be brought to a stand at the separately mounted tonnage sign until the next signal shows a proceed aspect
- to prevent heavily loaded rail traffic being stopped at a signal on ascending or descending grades



Standard

Observance of Signals Manual
Module SG 3 – Shunting Signals and Indicators

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

3 Shunting Signals and Indicators 3

3.1 Introduction 3

3.2 Shunt Signal 3

3.3 Position Light Signals 4

3.4 Semaphore Calling On Signals 7

3.5 Siding Signals 8

3.6 Long Range Points Indicators 9

3.7 Long Range Repeat Points Indicator 10

3.8 Points Indicators 11

3.9 Catch Point Disc 12

3.10 Trailable Facing Points Indicator 12

3.11 Signal Aspect Indicator 13

3.12 Dynamic Speed Indicators 14

3 Shunting Signals and Indicators

3.1 Introduction

3.1.1 Purpose of module

This module provides the procedures required to identify, read and obey shunting signals and indicators

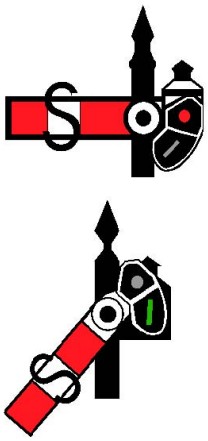
3.1.2 Section Information

Where necessary each signal is given

- a description (written and/or graphic), location and purpose
- working procedures under an Indications and Working section

3.2 Shunt Signal

Description	• a semaphore arm with an 'S' mounted on the front • at night, shows a smaller than normal green light for PROCEED and a smaller than normal red light for STOP
Location	• separately mounted or on stop signal posts
Purpose	• to regulate shunting movements



3.2.1 Indications and working

a) indications and working

When the signal shows

- a stop aspect
  - stop and obey any running signal
- a proceed aspect
  - proceed at restricted speed to the limit of shunt board or intervening signal showing a stop aspect

b) passing shunt signal at proceed

When the starting signal or stop signal is at stop and the attached shunt signal is showing a proceed aspect

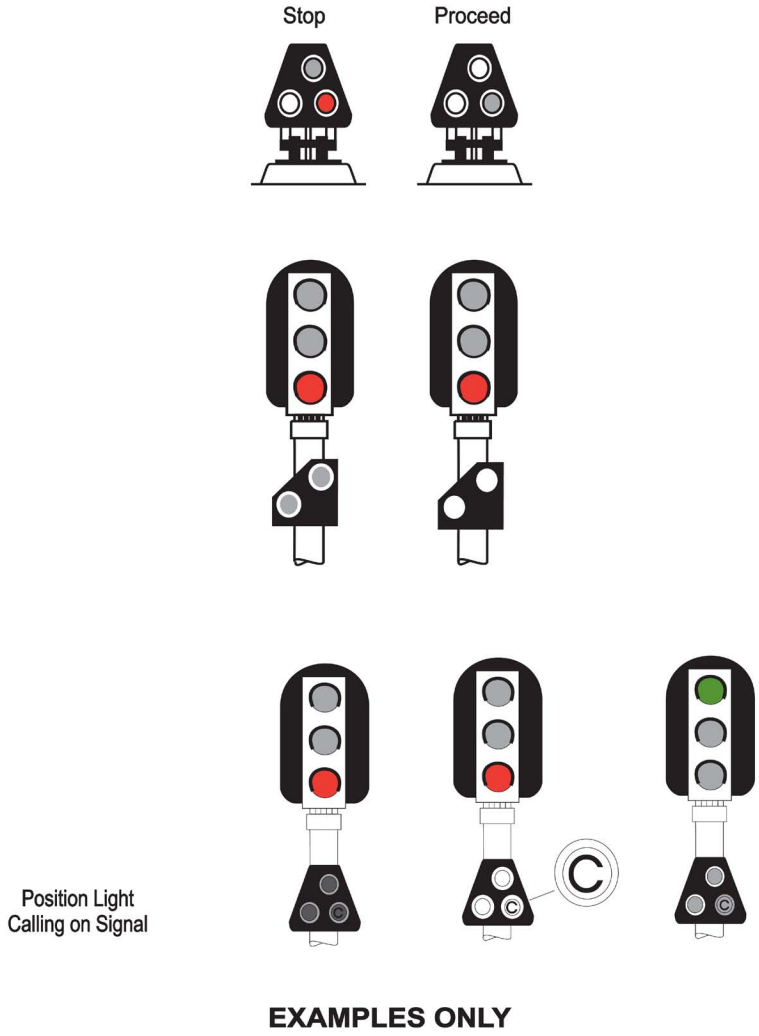
- rail traffic can pass the starting or stop signals at stop, for shunting purposes only, within the limits of the station yard

3.3 Position Light Signals

Location
- on signal posts or separately mounted

Purpose
- to allow rail traffic to pass a stop signal at stop for a non-running move
- to indicate detected points ahead are correctly set and conflicting signals are at stop

Figure SG 3.1 Rail Traffic Movement and Signal Requirements



3.3.1 Indications and working

a) signal indications

When a position light signal shows

- a STOP aspect
  - when separately mounted, stop and obey the position light signal
- a PROCEED aspect, proceed at restricted speed
  - to the limit of shunt board, or
  - intervening signal showing a STOP aspect, or
  - as far as the track ahead is clear

Note: Position light signals do not detect track occupancy. They do detect that the points are correctly housed. They do not indicate which way the points are set. It is always required to check which way the points are set before authorising a movement over them.

b) position light signals not to be used for running movements

Position Light Signals must not be used for running moves unless an Alternative Proceed Authority is issued on a Written Authority for Rail Traffic form.

Positional Light Signals are used in the following situations for:

- amalgamating rail traffic
- stowing rail traffic in an occupied signal section
- attaching or detaching locomotives or rail vehicles
- moving to a limit of shunt board
- entering a siding where the running signal does not apply

Note: For the signalling system to provide protection, signals must be obeyed.

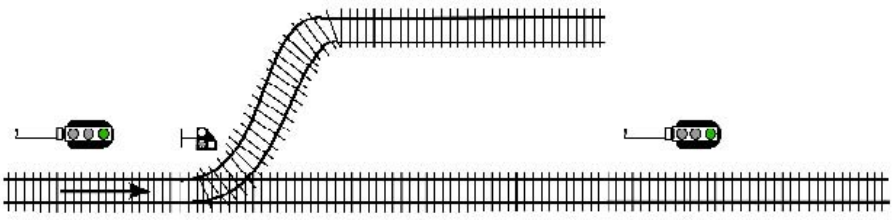
c) leading position light signals

Description	• when a running signal on the approach side of a leading position light signal displays a proceed indication the leading position light signal will also display a proceed indication as shown in Figure SG 3.2
Location	• leading position light signals are located between two running signals and are separately mounted as shown in Figure SG 3.2
Purpose	• may be used for both shunting or running movements • when used for a running movement normal road speed will apply over the signalled section • will apply to the track up to the next running signal

Note: When the leading position light signal is cleared for a shunting movement and is not cleared in conjunction with a running signal, the procedures in SG 3.3.1 a) apply.

Note: Semaphore shunt signals are also used at some locations as leading shunt signals.

Figure SG 3.2 Leading Position Light Signal



If the previous running signal was at proceed and the leading position light signal is showing an irregular signal

- attempt to stop the rail traffic prior to the signals
- tell the Network Control Officer
- proceed at restricted speed to the next running signal when authorised by the Network Control Officer and obey that signal

d) position light calling on signal - day or night indication

Day or night, a position light calling on signal shows the same indication for PROCEED

- two white lights, and
- a letter 'C' in the lower right hand lens

e) calling on signal not at proceed

When a calling on signal is NOT at proceed, there is no indication

Rail Traffic Crew

- obey the indication of the main signal

f) passing a calling on signal at proceed

When rail traffic is approaching a calling on signal

Officer in Charge

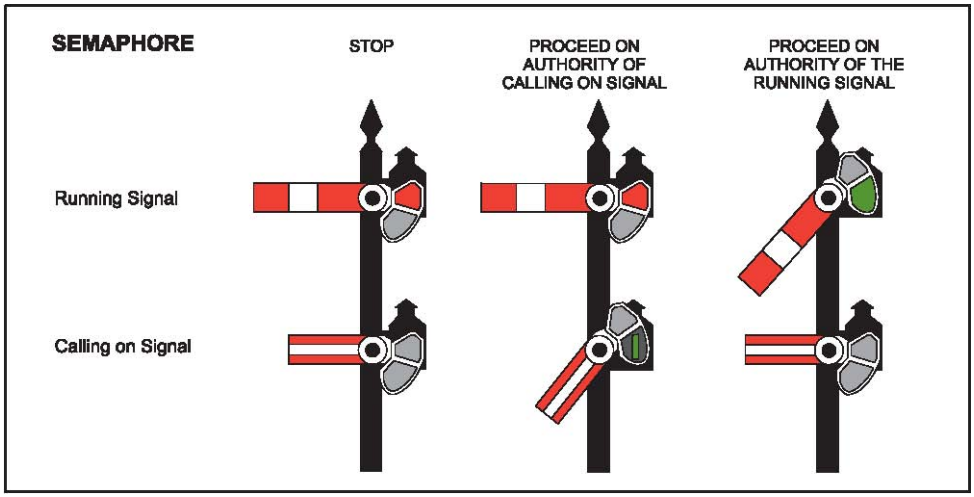
- make sure rail traffic is stopped or nearly stopped before placing the signal to proceed

Rail Traffic Crew

- proceed at restricted speed as far as the track is clear, or to the next stop signal, or as instructed by the Officer in Charge

3.4 Semaphore Calling On Signals

Location	• fixed on posts below some stop signals
Purpose	• to avoid handsignalling of rail traffic past a running signal at stop



3.4.1 Indications and working

a) semaphore calling on signal – night indication

At night, a semaphore calling on signal shows

- no light at stop position
- a smaller than normal green light at proceed

b) semaphore calling on signal not at proceed

When a semaphore calling on signal is NOT at proceed, there is no indication

Rail Traffic Crew

- obey the indication of the main signal

3.4.2 Passing a semaphore calling on signal at proceed

When rail traffic is approaching a semaphore calling on signal

Officer in Charge

- make sure rail traffic are stopped before placing signal to proceed

Rail Traffic Crew

- proceed at restricted speed
  - as far as the track ahead is clear, or

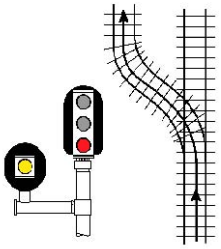
- to the next stop signal, or
- as instructed by the Officer in Charge

3.5 Siding Signals

Description
- a single aspect light signal bracketed from the main signal post,

Location
- at the entrance to sidings or loop lines from the main line

Purpose
- to allow the movement of rail traffic from the main line into sidings or through loop lines



3.5.1 Indications and working

The indications and working of siding signals are

- when the points are set for the main line
  - the single aspect light signal will not show an aspect
- when the points are set for the siding
  - the single aspect light signal will show a yellow aspect in conjunction with a stop aspect in the main signal
- if the single aspect light signal applies to more than one track a route indicator will be mounted above the junction signal

Note: When entering sidings or loop lines, rail traffic may proceed to the next stop signal at a speed not exceeding 25 km/h, except when a higher speed is indicated and the next signal is displaying a proceed aspect.

3.6 Long Range Points Indicators

Description
- A two aspect colour light indicator capable of giving 3 indications,
  - Steady White points set for main line
  - Flashing White points set for the loop line and
  - Red points not detected normal or reverse.

Location
- On the approach to points In DTC territory

Purpose
- to indicate the condition and the position of the points from a long distance.

Aspect	Red	Flashing White	White
Variations		Remote Controlled Points Only	
Meaning	Stop	Points Reverse	Points Normal
long Range Point Indictor Two Aspect		Flashing	

3.7 Long Range Repeat Points Indicator

Description

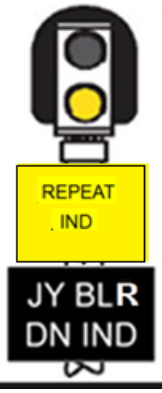
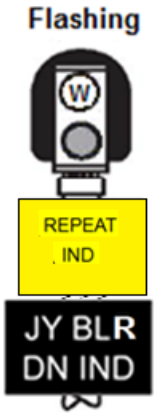
- A two aspect colour light indicator capable of showing 3 indications,
  - Yellow-LRPI in advance has a restrictive indication (prepare to stop point's not detected normal or reverse),
  - Flashing White-LRPI in advance indicating points detection reverse (proceed in accordance with the authorisation of DTC authority) and
  - White-LRPI in advance indicating points detection normal (proceed in accordance with the authorisation of DTC authority)

Location

- On the approach to a Long Range Points Indicator In DTC territory

Purpose

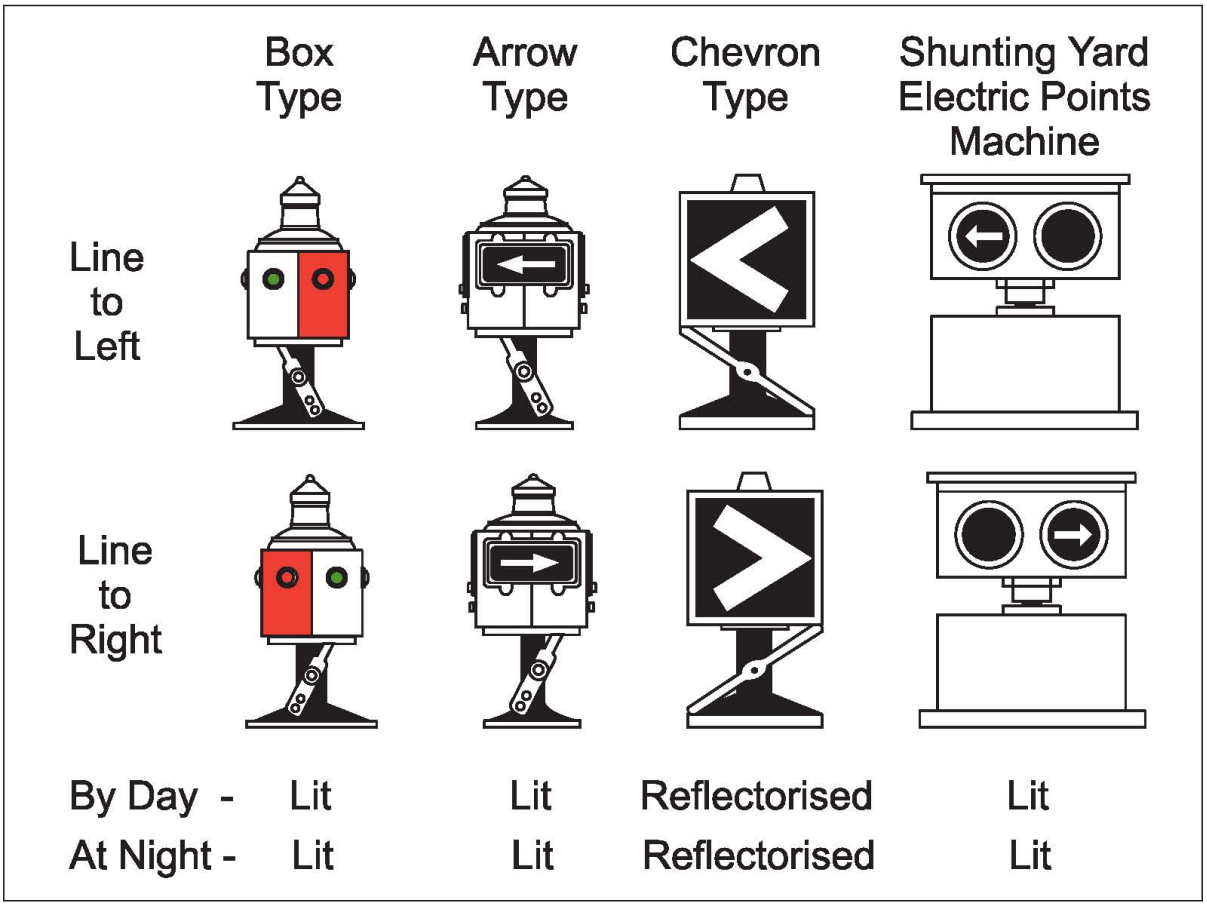
- Used when sighting distance to the long-range points indicator is restricted.

Aspect	Yellow	White	White
Meaning	Expect the next Indicator at stop and prepare to stop	Expect the next Indicator Indicating Points Reverse	Expect the next Indicator Indicating Points Normal
long Range Repeat Point Indictor Two Aspect		Flashing 	

3.8 Points Indicators

Location
- near points to which they are connected

Purpose
- to indicate the way the points are set



3.8.1 Indications and working

Passing points indicators

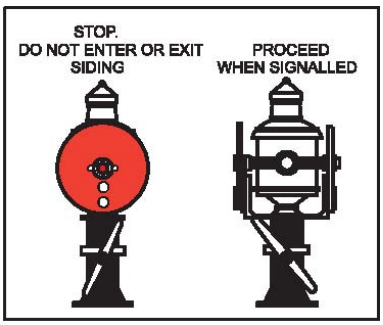
Rail Traffic Crew

- must receive authority from a signal, shunting staff or Officer in Charge before proceeding past points

3.9 Catch Point Disc

Location
- at the clearance points and attached to catch point of some sidings

Purpose
- to indicate clearance points of sidings
- to indicate the way the catch point is set



3.9.1 Indication and working

a) proceed indication

Catch point discs showing a white light and no disc, indicate points are correctly set for entrance to, or exit from a siding

Rail Traffic Crew

- do not proceed before receiving a verbal, hand or radio signal

b) stop indication

Catch point discs showing a red light and a red disc indicates the catch point is open

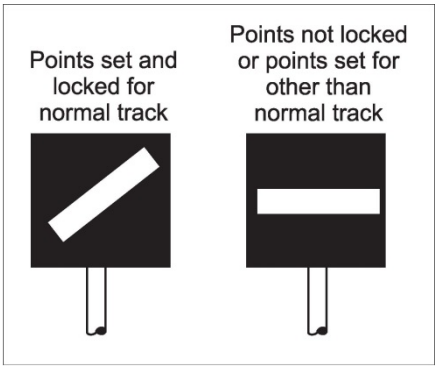
Rail Traffic Crew

- do not proceed
- tell Officer in Charge, to reset the catch point for the movement of the rail traffic

3.10 Trailable Facing Points Indicator

Location
- adjacent to points to which they are connected

Purpose
- to indicate whether or not the points are set and locked for the normal track



Note: The indicator is visible on both sides of the board.

3.10.1 Indications and working

a) indicator in normal position

When the indicator shows the points are in the normal position

Rail Traffic Crew

- proceed into the normal track, obeying all signals

b) indicator not in normal position

When the indicator shows the points are not locked or are set for other than the normal track

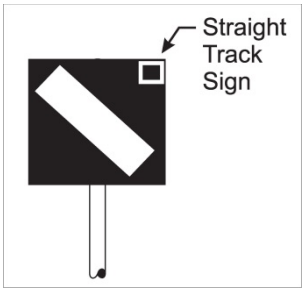
Rail Traffic Crew

- stop rail traffic
- check points are locked for the track the rail traffic is to enter
- reset points, if necessary
- continue when points are correctly set and locked
- if points cannot be set, tell Officer in Charge

3.10.2 Straight track sign

Location
- on the rear of trailable facing points indicators

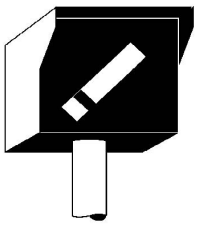
Purpose
- to indicate that speed may be increased for rail traffic travelling on the straight track after the lead of the rail traffic has passed through the points



3.11 Signal Aspect Indicator

Location
- placed where the view of the main signal may be obstructed

Purpose
- when lit, it indicates the signal to which it applies is at proceed
- to assist workers when giving rightaway



3.11.1 Indications and working

When the indicator shows a proceed aspect

Rail Traffic Crew giving Rightaway

- make sure the main signal to which the indicator applies to, is at proceed
- make sure the rightaway signal is received prior to departure

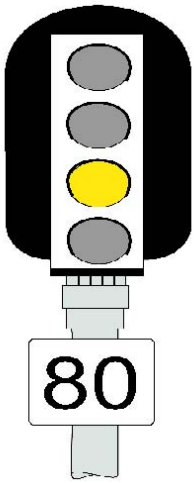
  Note: The main signal is the authority to proceed into the section and rail traffic crews must not rely on the indicator.

3.12 Dynamic Speed Indicators

Description
- an indicator attached to
  - a two aspect colour light signal capable of showing a yellow aspect, or
  - a three or four aspect colour light signal

Location
- mounted on the signal post below the main signal

Purpose
- to indicate to rail traffic crew
  - the next signal is displaying a CAUTION aspect, and
  - any speed displayed in the indicator applies for entrance to the route set at that next signal



3.12.1 Indications and working

The indicator displays two digits when lit, representing a speed in km/h. The indications may be 25, 40, 50, or 80.

The speed shown on the indicator is the maximum entrance speed applying for the route set at the next signal, or until the rail traffic driver can determine from the aspect shown in the next signal, the safe speed for that route.

The indicator will not display an indication when the

- signal on which it is mounted is showing a green aspect, double yellow aspect or
- next signal is showing a stop aspect

Note: Where a speed board shows a lower speed than that shown on the indicator, the speed board speed must be obeyed.

Standard

Observance of Signals Manual
Module SG 4 – Boards

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

Table of Contents 2

4 Boards 3

4.1 Introduction 3

4.2 Speed Boards 3

4.3 Whistle Boards 5

4.4 Limit of Shunt Boards 5

4.5 Clearance Point Boards 6

4.6 Block Limit Boards 6

4 Boards

4.1 Introduction

4.1.1 Purpose of module

This module provides instructions and/or information conveyed by boards (other than stop boards, see section SG 2.7).

4.1.2 Section Information

Where necessary each board is given a description (written and/or graphic), location and purpose.

4.2 Speed Boards

Description

- **Front -** black numbers or letters on a yellow reflectorised background (see examples of speed boards in SG 4.2.1)
- **Rear** - black

Location

- at the start of a portion of track where the maximum permissible speed in force varies, for example
- there are often speed variations at or near the start and end of curves, or
- where there is a requirement to repeat the speed indication for the benefit of the rail traffic crew

Purpose

- to indicate the maximum speed at which a rail traffic may travel, provided there is no conflict with the signals or instructions, for example
  - trailable facing points indicators
  - permanent way protection signals
  - permanent speed boards
  - permanent way speed restriction equipment
  - special permanent speed boards restricting the operation of certain traffic on a section of track
  - dynamic speed indicator (DSI)
  - train notice/weekly notice/circular memo or other business instructions
  - Operational Route Manual and On-track Vehicle Data Manual
  - any other requirements of General Operational Safety Manual
  - hand signallers instructions
  - speed restrictions advised by Network Control Officer
  - ATP indicators

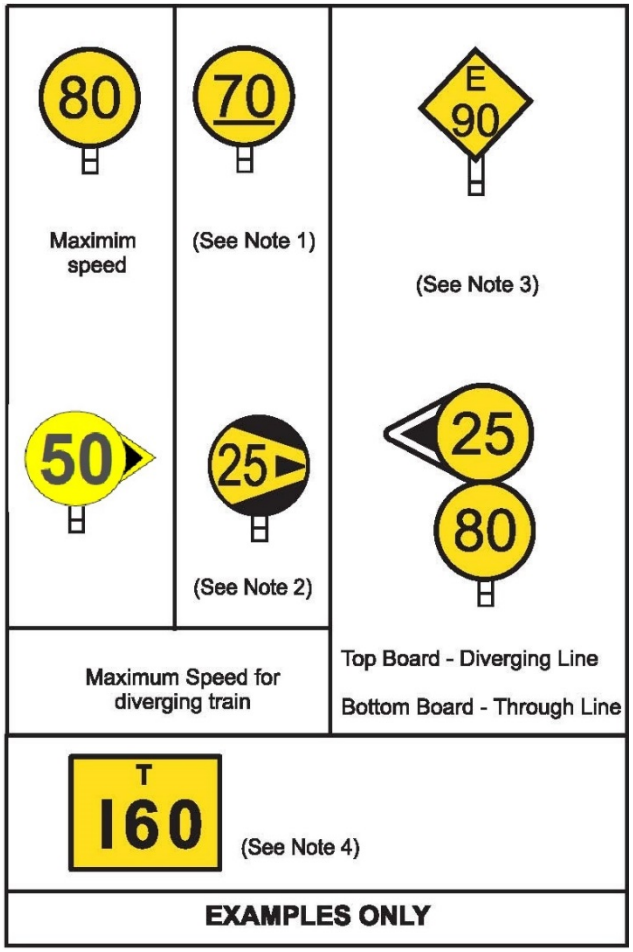
4.2.1 Speed changes

The speed indicated on a speed board will remain in force until the next change of speed is indicated.

When rail traffic approaches or passes a speed board

Rail Traffic Crew

- decrease to indicated speed before the lead locomotive or leading rail vehicle passes a board indicating a lower speed
- increase to indicated speed after the last rail vehicle of the rail traffic has passed a board indicating a higher speed



Notes:

1) The bar indicates nominated rail traffic may exceed the speed shown by a given percentage, for example, ICE trains. *ATP Operational Manual*
2) This type is used only where clearance is limited, for example, between adjacent running lines
3) This board is in use in some locations in the Brisbane Suburban Area and between Ipswich and Rosewood and indicates the speed for train units. If the board following an 'E' is a standard round board, the speed of the standard round board must be observed.
4) This board applies to tilt trains only.

.

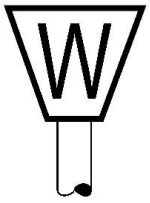
4.2.2 Speed board with a straight track sign

Description
- **front** – a speed board on a black background with a Straight Track Sign in the top right-hand corner
- **rear** – black

Location
- at the start of a portion of track where the maximum permissible speed in force varies, for example, level crossings and at other locations where it is not necessary for the entire rail traffic to pass the board before increasing speed.

Purpose
- to indicate that the speed of the rail traffic may be increased to the speed shown on the speed board with the straight track sign once the front of the rail traffic passes the board

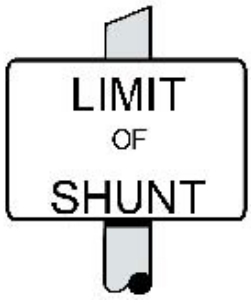
4.3 Whistle Boards



Location
- at places where it is necessary for rail traffic to whistle, for example, level crossings, bridges, tunnels

Purpose
- to tell rail traffic crews to sound a whistle to warn workers and/or members of the public that rail traffic is approaching

4.4 Limit of Shunt Boards



Location
- at various locations throughout Queensland Network

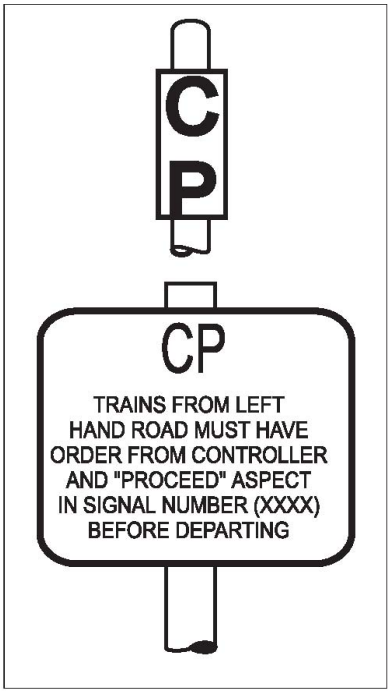
Purpose
- to define the limit of shunting operations

Note: Limit of Shunt Boards must not be passed when moving on the authority of a shunt signal, DTC shunt authority or hand, flag or verbal signal.

4.5 Clearance Point Boards

Location
- usually found where lines converge

Purpose
- to indicate the point where rollingstock will not foul rollingstock on an adjacent line

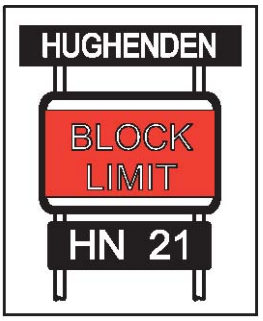


Note: Some clearance point (CP) boards have instructions attached.

4.6 Block Limit Boards

Location
- in DTC territory
- at the limits of a block section

Purpose
- to define the limit of a particular block section



Standard

Observance of Signals Manual
Module SG 5 – Defective Signals, Points, Interlocking and Track Detection

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

5 Defective Signals, Points, Interlocking and Track Detection 3

5.1 Introduction 3

5.2 New and Altered Signals and Points 3

5.3 Defects – Signals, Points, Interlocking and Track Detection 4

5 Defective Signals, Points, Interlocking and Track Detection

5.1 Introduction

5.1.1 Purpose of module

This module describes actions required in the event of defective signals, points, interlocking or track detection.

5.1.2 Defects to be reported

All workers are to report any defects or failures to signals, boards, signs, points, interlocking and track detection. The report is to be made immediately to the Officer in Charge who will see that repairs are arranged. The Operations Manager must be told of serious incidents.

The report made by the worker must include a description of the fault and the identification numbers and letters of signals and points, where provided.

5.2 New and Altered Signals and Points

When new signals, points or signalling equipment are to be installed OR existing equipment is to be removed, relocated or altered OR where planned maintenance is to be carried out

Operations Manager

- publish advice of planned work in train notice
- make suitable traffic arrangements
- arrange for permanent alterations/additions to be published in the *Weekly Notice*

Installer/Repairer

- obtain authority to start work from Officer in Charge
- when work is complete
  - certify equipment has been tested and meets safety requirements
  - tell Officer in Charge if any alterations have been made and when normal traffic can resume

Officer in Charge

- do not use signalling equipment until told by the installer/repairer it is certified fit for normal traffic operations

5.3 Defects – Signals, Points, Interlocking and Track Detection

5.3.1 Workers arriving to carry out repairs

When arriving at the site and before commencing any work

Workers

- contact Officer in Charge of the signals/points
- obtain
  - information on rail traffics to travel over affected track
  - current status of fault
  - authority to begin repairs

5.3.2 Traffic Not Affected

When any defect or failure of signals, points, interlocking or track detection is reported to the Officer in Charge, and traffic is not affected

Repairer

- if work will affect the operation of the signalling system, obtain authority to start repair work from the officer in charge
- tell the Officer in Charge how long it will take to carry out repairs
- tell the Officer in Charge when the repairs have been completed

5.3.3 Traffic affected

a) Signals can be placed at stop

When traffic is affected and signals can be placed at STOP, and radio/telephone communication is available

Officer in Charge

- arrange for signals protecting the affected area to be placed at STOP
- tell rail traffic crews the circumstances
- before the movement of any rail traffic
  - get authority from repairer
  - make sure any points have been set and secured

Repairer

- get authority from officer in charge before starting repair work
- tell Officer in Charge when work is completed and normal traffic can resume

Rail Traffic Crew

- make sure points are set correctly for the passage of rail traffic
- proceed only on the authority of the Officer in Charge

b) Semaphore signals cannot be placed at STOP

When traffic is affected and semaphore signals cannot be placed at stop, or do not give adequate protection to the points or worksite, or there is no radio communication with the rail traffic crew

Officer in Charge

- arrange a handsignaller
- position the handsignaller to protect the defective signals/points
- make sure the handsignaller is provided with the necessary equipment and is aware of the duties to be performed
- tell rail traffic crew details of the fault or problem

Repairer

- get authority from the Officer in Charge to commence repair work
- tell Officer in Charge when work is complete and normal traffic can resume

Handsignaller

- act under instructions of the Officer in Charge
- where points are involved, tell the Officer in Charge which way they are set and if secured
- do not signal rail traffic to proceed unless
  - the points are correctly set and secured
  - authority has been given by the Officer in Charge
- where necessary, tell rail traffic crew to proceed only as far as the track is clear

Rail Traffic Crew

- stop rail traffic until given authority to proceed
- check points are correctly set and secured for the rail traffic
- proceed at restricted speed as far as the track is clear or to the next stop signal
- prepare to stop short of any obstruction

c) Colour Light Signals cannot be placed at stop

When traffic is affected, and Colour Light Signals cannot be placed at STOP, or do not give adequate protection to the points or worksite, or there is no radio communication with the rail traffic crew

Officer in Charge

- arrange to have all rail traffic told not to pass signals until authorised
- if the signal cannot be placed at stop, arrange a handsignaller to protect the signal
- if possible, tell rail traffic crew details of the fault

Repairer

- get authority from Officer in Charge to commence repair work
- tell Officer in Charge when work is complete and normal traffic can resume

Handsignaller

- act under instructions of the Officer in Charge

Officer in Charge

- authorise
  - workers to operate points
  - rail traffic to pass defective signals on the appropriate authority

Workers

- do not operate points unless authorised by the Officer in Charge

Standard

Observance of Signals Manual
Module SG 6 – Signs

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

6 Signs 3

6.1 Introduction 3
6.2 Safeworking Territory Signs 3
6.3 ATP Work Area Ahead Advisory Signs 3
6.4 Entrance ATP Work Signs 3
6.5 Exit ATP Work Signs 4
6.6 Cane Railway Crossing Signs 4
6.7 Level Crossing Signs 4
6.8 Kilometre Signs 4
6.9 Signal Number Plate Signs 5
6.10 Trailable Points Signs 5
6.11 Change Radio Channel Signs 5
6.12 Track Indicator Signs 6
6.13 Signal Count Down Signs 6
6.14 Signal Distance Marker Signs 7
6.15 Platform Stopping Markers 8
6.16 Speed Warning Signs 9
6.17 AWS SIGNS 9
6.18 Clear Of Restricted Area Markers 10
6.19 In Clear Markers 11
6.20 Super Control Signs 11
6.21 SP Plates 11

6 Signs

6.1 Introduction

6.1.1 Purpose of module

This module describes some signs which are used to tell rail traffic crews and other workers of particular safeworking situations, or to identify locations. This module does not attempt to cover all signs which may be used in Queensland Rail.

6.2 Safeworking Territory Signs

See Queensland Network Rules and Procedures; QR 6007 Signs – General Section 7 Entrance Signs

6.3 ATP Work Area Ahead Advisory Signs

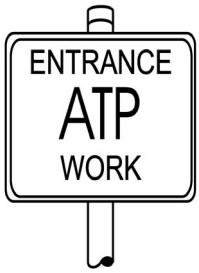
Location
- approximately 2000 metres on the approach side of the Entrance ATP Work Sign

Purpose
- to warn rail traffic crews they are approaching an ATP work area

6.4 Entrance ATP Work Signs

Location
- at the start of a work area in ATP territory

Purpose
- to warn rail traffic crews and other workers the rail traffic is no longer supervised by ATP



6.5 Exit ATP Work Signs

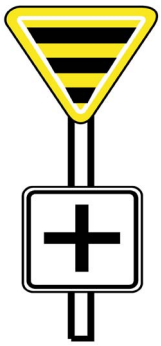
Location
- at the exit of a work area in ATP territory

Purpose
- to warn rail traffic crews and other workers the rail traffic is again supervised by ATP

6.6 Cane Railway Crossing Signs

Location
- placed on approach signals or approach beacons to cane railway crossings

Purpose
- to indicate to rail traffic crews and other workers they are approaching a cane railway crossing protected by a stop signal



6.7 Level Crossing Signs

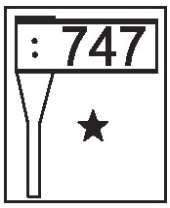
Location
- placed on approach signals or approach beacons to some level crossings

Purpose
- to indicate to rail traffic crews and other workers they are approaching a level crossing fitted with flashing lights and protected by a stop signal

6.8 Kilometre Signs

Location
- located every kilometre on the left hand side in the direction of increasing kilometres

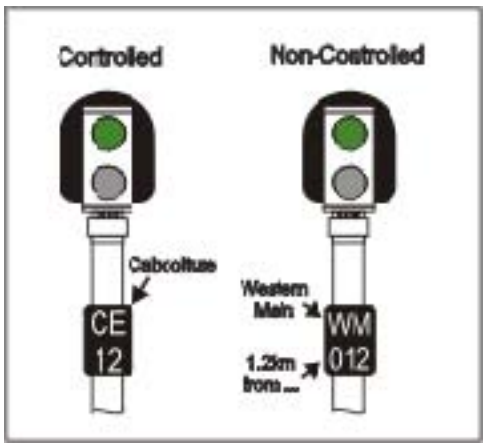
Purpose
- to identify a distance in kilometres from a set point, for example, from a junction of a branch track in the direction of increasing kilometres



6.9 Signal Number Plate Signs

Location
- attached to signal posts

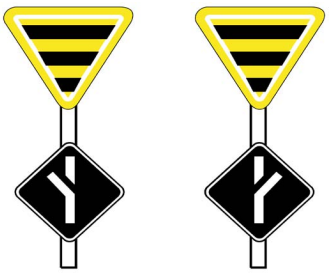
Purpose
- for controlled signals
  - the letters identify the location
  - the numerals identify the particular signal
- for non-controlled signals
  - the letters identify the track the signal applies to
  - the numerals identify the distance along the track in the Brisbane Suburban Area, or
  - the particular signal



6.10 Trailable Points Signs

Location
- attached to the post of an approach beacon
- on the approach side of trailable facing points

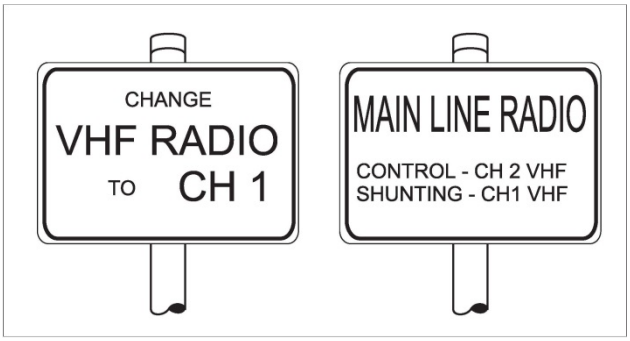
Purpose
- to indicate to rail traffic crews the direction trailable facing points are normally set



6.11 Change Radio Channel Signs

Location
- to tell workers the radio channel on which to operate

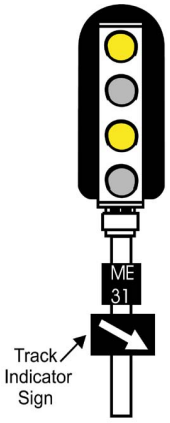
Purpose
- where required for workers to change radio channels



6.12 Track Indicator Signs

Location
- attached to some signal posts, boards and signs where there are adjacent tracks

Purpose
- to indicate to which track the signal, board or sign applies

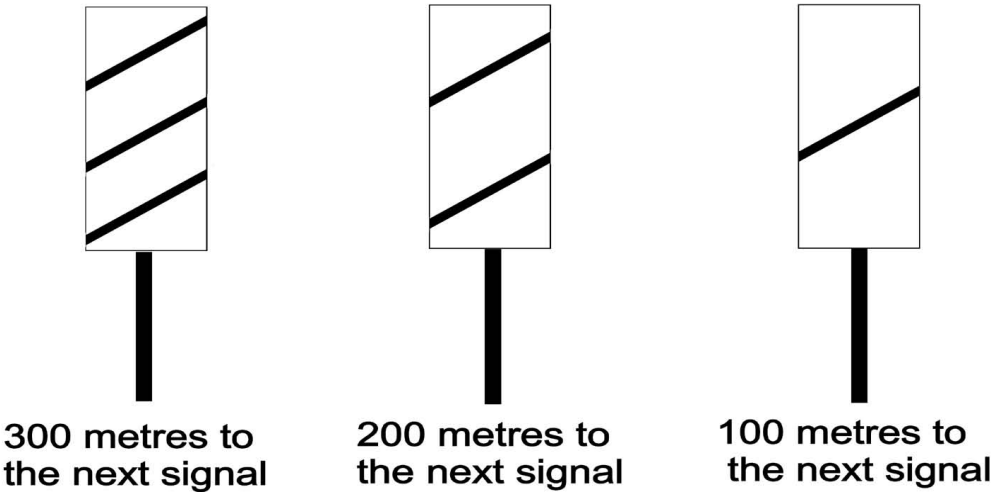


6.13 Signal Count Down Signs

Description
- reflectorised white with one, two or three black diagonal stripes

Location
- one stripe, placed 100 metres from signal
- two stripes, placed 200 metres from signal
- three stripes, placed 300 metres from signal

Purpose
- to provide the rail traffic driver with distance information up to a signal at a difficult location
- to assist the rail traffic driver when deciding on braking requirements



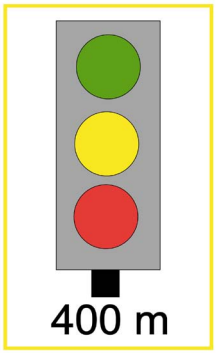
6.13.1 Indications and working

The rail traffic driver should use the Signal Count Down Signs only as a guide during the final stages of braking at a red signal. The speed of the rail traffic should be in accordance with the distance remaining to the signal.

6.14 Signal Distance Marker Signs

Description

- displays an illustration of a colour light signal on a reflectorised white background within a yellow border. The distance to the next running signal is displayed in metres at the bottom of the sign **Note:** The distance can be altered to suit any location



EXAMPLE ONLY

Location

- no more than 1000 metres on the approach side of a running signal
- where the view of a signal is restricted

Purpose

- to give the rail traffic driver prior warning of a running signal in advance
- to indicate to the rail traffic driver a running signal with restricted visibility ahead

6.14.1 Indications and working

The observance of a Signal Distance Marker Sign should prompt the rail traffic driver into recalling the aspect of the previous signal when approaching the next signal.

If the rail traffic is fitted with Automatic Warning System (AWS) and it is exhibiting a restrictive indication, the rail traffic must approach the next signal(s) expecting to find a stop aspect being displayed.

6.14.2 Check AWS Sign

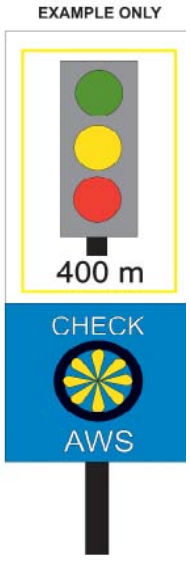
A Check AWS Sign is attached to a Signal Distance Marker Sign post

Description

- a yellow and black (AWS) “sunflower” with the words CHECK AWS in white on a blue background

Location

- attached to the signal distance marker sign at a point no more than 1000 metres on the approach side of a running signal, and no less than 20 metres from the departure end of a platform



Purpose
- to prompt the rail traffic driver
- to check the indication of the previous signal on the AWS

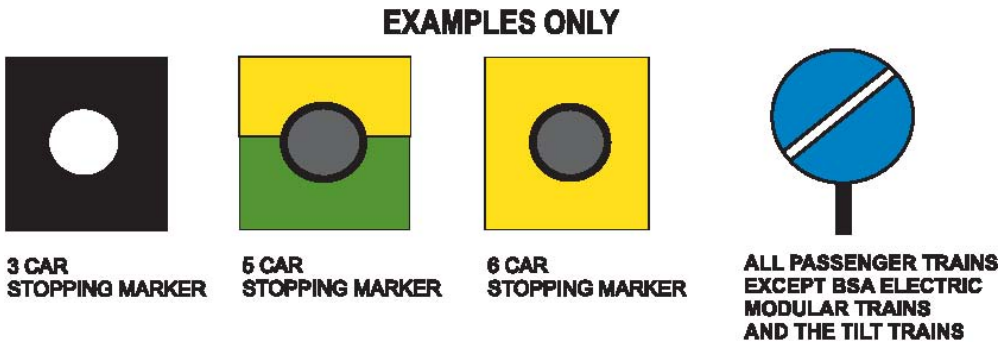
If the Automatic Warning System (AWS) is showing a restrictive indication ('Sunflower'), expect the next signal to be at stop. Proceed, prepare to stop prior to the next signal.

6.15 Platform Stopping Markers

Description
- coloured squares when painted on station platforms
- coloured rectangles or circles when erected on trackside signs

Location
- on station platform edges or trackside signs

Purpose
- to mark the stopping point for a passenger train at a platform



6.15.1 Indications and working

Train units will use the appropriate marker when stopping the rail traffic at the platform. The length of the rail traffic in cars will determine which stopping mark is appropriate. The rail traffic should be stopped with the side window of the leading cab opposite the marker.

Locomotive hauled SX sets (7 cars) will stop with the lead end of the locomotive at the six (6) car marker.

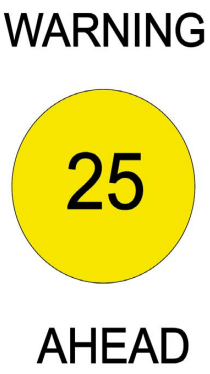
Air-conditioned long distance passenger trains will stop, unless otherwise instructed, with the leading end of the locomotive at the appropriate stopping marker. If two locomotives are used the rail traffic will stop with the leading end of the second locomotive at the stopping marker.

6.16 Speed Warning Signs

Description
- reflectorised white with black lettering and a depiction of a speed board

Location
- placed on the approach side of some speed boards and especially at locations where the maximum speed decreases sharply

Purpose
- to warn rail traffic crews there is a speed board ahead showing a decrease in speed board speed

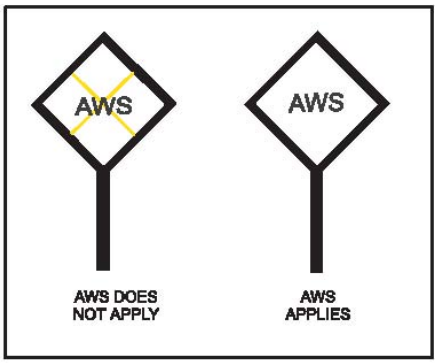


6.17 AWS SIGNS

Description
- AWS signs are white diamond shaped with a black border and black lettering

Location
- at the start and finish of a simplified bi-directional signal section in the Brisbane Suburban Area

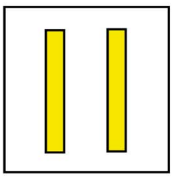
Purpose
- to indicate to rail traffic crews the application of AWS warnings when running over simplified bi-directional signal sections



6.18 Clear Of Restricted Area Markers

Description

- two 300 mm long and 75 mm wide vertical yellow stripes attached to the overhead support structures to indicate a distance of 1700 metres past the restricted area
- one 300 mm long and 75 mm wide vertical sign with black and reflectorised yellow diagonal stripes, attached to a post, to indicate a distance of 1000 metres past the restricted area



Attached to Overhead Support Structures 1700 metres past restricted area

1000 metres past the restricted area

Location

- attached to the overhead support structures in electrified areas or on a separate post in non electrified areas
- placed at the designated distance past a restricted area, for example, a turnout or temporary speed restriction

Purpose

- defines the point when rail traffic of the nominated length indicated is clear of a restricted area

6.18.1 Indications and working

Rail traffic drivers may use these signs to assist in determining when the rear of the rail traffic is clear of a restricted area.

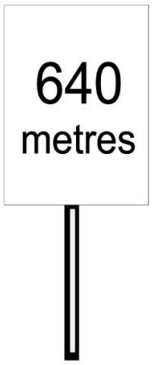
6.19 In Clear Markers

Description

- a white sign bearing numerals in metres
- reflectorised cats eyes fixed to the sleepers adjacent to the reflectorised signs
- a reflectorised stripe fixed to the post

Note: In some locations, due to curves, the markers will be on posts which can be seen above the highest loaded wagon

EXAMPLE ONLY



Location

- in some crossing loops

Purpose

- indicates to rail traffic drivers that rail traffic at a given length (for example, 640 metres) is in clear of the signal at the rear of the rail traffic to allow a passing or crossing movement to take place

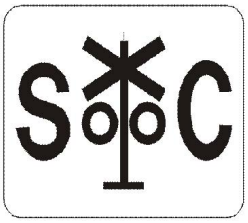
6.20 Super Control Signs

Description

- black lettering on a white background

Location

- the sign is attached to the signal post of the signal prior to the level crossing



Purpose

- to indicate that the level crossing immediately in advance of the signal operates under Super Control

6.21 SP Plates

Location

- fitted to signal posts on uncontrolled signals at level crossings, cane railway crossings and at other locations where necessary

Purpose

- to allow rail traffic crews to pass signals at STOP fitted with SP plates after carrying out the necessary checks in addition to the procedures in GS 4.2.4, GS 4.2.5 and GS 5.2.3 of the General Operational Safety Manual

Standard

Observance of Signals Manual
Module SG 7 – Rightaway Signals

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

7 Rightaway Signals 3

7.1 Introduction 3

7.2 Methods Used for Giving Rightaway 4

7.3 Rightaway Procedures 5

7.4 Allright signal 6

7 Rightaway Signals

7.1 Introduction

7.1.1 Purpose of module

This module deals with the issue and receipt of rightaway signals and the procedures required in giving these signals.

7.1.2 Requirements for Rightaway Signals

a) Where required

Rightaway signals must be given where

- rail traffic is stopped for station duties
- a passenger train is stopped at a platform or station (refer Figure SG7.1)
- as per procedures

b) When required

Rightaway signals will be given

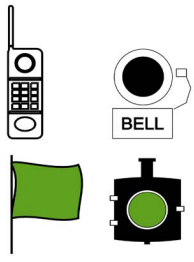
- first rightaway, when
  - rail traffic is to proceed
- second rightaway, when
  - rail traffic is moving and complete

Note: Where bell communications are provided, no second rightaway is to be given.

7.1.3 Equipment used for rightaway signals

Rightaway signals may be given by

- radio communication, or
- bell communication, or
- flag or light signals



7.1.4 Acknowledgment of rightaway signals

After a rail traffic crew receives a rightaway signal

Rail Traffic Crew

- acknowledge each signal by
  - communicating by radio, or
  - sounding one short whistle

7.2 Methods Used for Giving Rightaway

7.2.1 Rightaway using flags, lights or bell

When radio communication is not used for transmitting rightaway, the following signals will be used

- by day
  - first and second rightaway is indicated by a green flag held outstretched at shoulder height
- by night
  - first and second rightaway is a green light held steadily in the hand

Note: Where the rightaway signal cannot be readily seen by the rail traffic crew of the locomotive, it may be relayed by a worker delegated to do so.

- bell communication
  - first rightaway is indicated by two bells
  - second rightaway is not required

Note: One bell indicates ‘stop’, and three bells indicate an ‘emergency stop’ is required.

7.2.2 Rightaway using radio communication

When radio communication is used for transmitting rightaway, workers must follow the correct radio procedures.

7.3 Rightaway Procedures

7.3.1 Procedures for giving rightaway

When rail traffic is ready to depart from a station platform or yard, the following procedures will apply.

Figure SG 7.1 Procedures for Giving Rightaway

Procedures	Passenger Service Staff	Guard	2nd Person	DOO
The allright signal will be received from station or yard staff, if on duty, by the	✓	✓	✓	✓
Check the next signal, if visible, is at proceed.		✓	✓	
First rightaway will be given, when rail traffic is ready and authorised to depart, by the	✓	✓	✓ (Verbal)	
Second rightaway will be given, when rail traffic is moving and complete, by the	✓	✓		
Advice is to be received from station or yard staff, if on duty, that rail traffic is moving and complete, by the			✓	✓

Note: Rail Traffic Guards and Passenger Service Staff must maintain vigilance until rail traffic has cleared the platform.

7.4 Allright signal

The Allright signal will be provided by the Officer in Charge or station staff when they are in attendance to indicate to rail traffic guard or passenger services staff, that station duties have been completed and all people are clear of the train.

- in areas with adequate lighting
  - one arm held at an angle of 45° above shoulder height
- in areas with reduced visibility
  - a white light held steadily above the head

The Allright signal will continue to be displayed by the Officer in Charge or station staff until acknowledged by the rail traffic guard or passenger service staff.

7.4.1 Procedures prior to giving the Allright signal

Prior to giving the Allright signal

Officer in Charge / station staff

- make sure station/yard staff have completed all duties associated with the rail traffic
- blow whistle or use loud speaker to warn people to stand clear of the rail traffic
- make sure all people are clear of the rail traffic
- make sure doors on passenger rail vehicles, not operated by the rail traffic driver, are closed
- give the Allright signal to the rail traffic guard/ passenger service staff

Note: Departure signals are NOT required to be checked by the Officer in Charge / station staff.

Standard

Observance of Signals Manual
Module SG 8 – Rail Traffic Signals

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

8 Rail Traffic Signals 3

8.1 Introduction 3

8.2 Responsibility of Workers 3

8.3 Rail Traffic Signals Required 4

8.4 Visibility Lights 5

8.5 Headlights 6

8.6 Headlight Failure 7

8 Rail Traffic Signals

8.1 Introduction

8.1.1 Purpose of module

This module deals with the signals used to identify rail traffic.

8.1.2 Safety

WARNING:

The safety of all workers is of the utmost importance. These signals must be correctly used at all times.

To assist in the safe movement of traffic and make workers aware of the approach and departure of rail traffic, and to make sure rail traffic is complete, it is necessary to clearly identify the front and rear of rail traffic.

As an aid to safety, the headlight on all lead locomotives and power units must be operating to the front both day and night. The only exceptions to this are included in this module.

The electrical source of rail traffic flashing light signals may cause a hazard when attached to LP gas rail vehicles. Therefore, LP gas rail vehicles MUST NOT be marshalled as the rear rail vehicle on rail traffic.

8.2 Responsibility of Workers

It is the responsibility of workers involved in the running of rail traffic to check that all rail traffic carries the correct rail traffic signals and to report any defective or missing signal to the Officer in Charge.

8.3 Rail Traffic Signals Required

8.3.1 Principle

Rail traffic direction-of-travel .and completeness must be shown by

- headlights or white marker lights at the front of the leading motive power unit, and
- at least one red tail light, or an approved end-of-train marker, at rear of the last vehicle

Approved end-of-train markers are either

- Rear of Train signals fitted with lights, or
- A white disc or triangle

Marker lights and tail lights must be

- (where fitted) lit during travel, and
- if defective, repaired or replaced as soon as possible

Rear of Train signals

- may travel without being lit during hours of good visibility
- must be lit during hours of poor visibility

8.3.2 End-of-Train markers and tail lights

a) Defective end-of-train markers or unlit tail lights

If an end-of-train marker with lights is unlit at night or in conditions of low visibility, the Network Control Officer must direct the rail traffic crew or Rollingstock Operator to have the end-of-train marker repaired or replaced as soon as possible.

When a rear of train signal becomes defective and shows no light

- continue to the next depot station where repairs can be effected
- report defect to Officer in Charge

If rail traffic is not fitted with an end-of-train marker, and the rail traffic does not have at least one working tail light, and rail traffic completeness cannot be assured, the Network Control Officer must

- arrange to work the rail traffic under manual block working conditions, and
- warn other rail traffic crew on adjacent lines and following the movement

b) Missing end-of-train markers and defective tail lights (where used)

If the end-of-train marker is missing or tail light is defective

- the identification number of the last vehicle of a rail traffic must be checked against the rail traffic consist documents, or
- the rail traffic must be otherwise verified as complete

Before attaching a rear of train signal to replace one that is missing

Worker

- check that the rail traffic is intact by making sure the number of the last vehicle matches the last vehicle shown on the rail traffic list
- if rail traffic is not complete, contact the Network Control Officer

Network Control Officer

- do not allow any rail traffic to enter the section until it has been confirmed that the section is clear

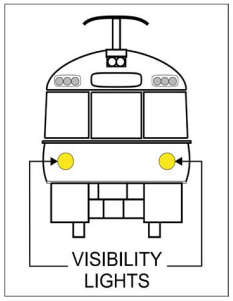
8.3.3 Workers to make sure rail traffic is complete

When rail traffic crosses or passes at stations or en route, it is the responsibility of each rail traffic crew involved in the crossing or passing movement, to

- make sure the other rail traffic is in clear and complete by observing the end-of-train marker tell the other rail traffic crew, if possible, their rail traffic is complete

Note: This procedure does not need to be carried out in RCS territory, except when opposing rail traffic is travelling on an Alternative Proceed Authority.

8.4 Visibility Lights



Some locomotives and power units are equipped with visibility lights. These lights consist of two small headlights located on the headstock on the leading end. They are designed to allow headlights to be turned off in certain situations and still allow rail traffic to be visible to oncoming traffic or workers ahead of the rail traffic. They also provide some view of the permanent way for the rail traffic crew. Visibility lights must remain on at all times when the rail traffic is moving.

8.5 Headlights

Headlights will be turned on when a locomotive/train unit is operating. Track vehicles fitted with headlights must have the headlight turned on when operating on track.

Headlights may only be dimmed or turned off as shown in Sections SG 8.5.1 and SG 8.5.2 of this module and must immediately be restored to bright when these situations no longer apply.

8.5.1 Headlights dimmed

Headlights will be dimmed when

- approaching station yards
- running through station yards
- a motor vehicle is approaching on a roadway from the opposite direction
- opposing rail traffic
  - approach a level crossing
  - are unable to see if the track ahead is clear, and any points are correctly set

Note: In Brisbane Suburban Areas during times of high density traffic, rail traffic may run with the headlight dimmed.

8.5.2 Headlights turned off

a) Power units fitted with visibility lights

Power units equipped with operating visibility lights may turn the headlight off if there is no level crossing, the track ahead is clear and points are correctly set when

- approaching an opposing rail traffic
- approaching station yards
- running through station yards
- standing in station yards
- at suburban stations
- a motor vehicle is approaching on a roadway from the opposite direction

b) Power units not fitted with visibility lights

Power units not equipped with visibility lights may turn the headlight off it there is no level crossing, the track ahead is clear and points are correctly set when

- approaching an opposing rail traffic
- at suburban stations
- standing in station yards

8.6 Headlight Failure

8.6.1 Failure of locomotive or power unit headlight

a) One Headlight Fails

Where two headlights are provided, and one headlight fails, the rail traffic may continue to its destination.

b) Total headlight failure

When all headlights fail, and

- repairs cannot immediately be effected
- the locomotive cannot be turned
- another locomotive cannot be moved to the front
- locomotive does not have visibility lights, or visibility lights are not working

By day

- obtain authority from Network Control Officer to proceed at restricted speed to the nearest station with repair facilities

By night or when visibility is reduced

- obtain authority from Network Control Officer to proceed at restricted speed to the nearest station with repair facilities
- in the Brisbane Suburban Area
  - rail traffic must not proceed past Mayne or outside the Brisbane Suburban Area before repairs are carried out
  - all exterior lights must be turned on
  - rail traffic must travel at a speed not exceeding 25 km/h
  - the locomotive/train unit whistle must be sounded approaching platforms, pedestrian crossings and level crossings
- in all other areas
  - all exterior lights must be turned on
  - the rail traffic may proceed at a speed not exceeding 25 km/h to clear the section
  - the locomotive/train unit whistle must be sounded approaching platforms, pedestrian crossings and level crossings

Track vehicles that experience total headlight failure – obtain authority from network control officer to proceed at restricted speed to nearest off tracking location or stabling facility where repairs can be carried out

Note: By Day or by Night Citytrain services must continue as a non-revenue service if the headlight fails

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Standard

Observance of Signals Manual
Module SG 9 – Rail Traffic Whistle Codes

MD-10-109

QUEENSLAND RAIL OFFICIAL

QueenslandRail

Table of Contents

9 Rail Traffic Whistle Codes 3

9.1 Introduction 3

9.2 Emergency Rail Traffic Whistle 3

9.3 Warning Rail Traffic Whistle 4

9.4 Rail Traffic Whistle Messages - No Radio Communication Available 5

9.5 Rail Traffic Whistles - Railway Track Signals 6

9.6 Failure of Rail Traffic Whistles 6

9 Rail Traffic Whistle Codes

9.1 Introduction

9.1.1 Purpose of module

This module contains rail traffic whistle codes used for emergency situations, warnings, and other messages.

9.1.2 Unnecessary use of Rail Traffic Whistle

Rail traffic crews are not to sound the rail traffic whistle unnecessarily, particularly in built up areas.

9.1.3 Sounding of Rail Traffic Whistle

Whistle messages are given by sounding short, long or continuous whistles.

They are generally described as being

- short whistle
  - a pop or a whistle of approximately one second
- long whistle
  - a whistle of approximately two seconds
- continuous whistle
  - a whistle used for an amount of time necessary to gain attention

9.2 Emergency Rail Traffic Whistle

9.2.1 Emergency situation

In an emergency or potential emergency situation, or where help is required

Rail Traffic Crew

- sound a continuous whistle or a continuous series of short whistles

9.3 Warning Rail Traffic Whistle

A long whistle must be sounded when the rail traffic crew has any reason to warn any worker/s of approaching rail traffic, including when

- approaching level crossings
- approaching locations where there are other rail traffic
- approaching a partly obscured stationary rail traffic which is on the opposite track
- entering tunnels except in the Brisbane Suburban Area
- approaching workers or members of the public who are in the Danger Zone
- approaching rail traffic whistle boards
- rail traffic is running in the wrong direction on a unidirectional track, and is approaching a cutting or where the view is obscured
- it is necessary to move a locomotive or a power unit.
  - The exception to this is in maintenance locations where a risk assessment has been performed and a documented process developed to control the risk of collision with workers, road vehicles or plant. Examples of risk controls may include but not be limited to:
    - A lock out system and process implemented that requires the track and locomotive or power unit to be locked out with personal locks for any workers that enter the profile of the rolling stock either externally or internally to eliminate all rolling stock movement
    - Maximum speed of rail traffic of 4kph
    - A documented process of handover from the maintenance facility to the network control officer or officer in charge
    - Controlled boom gate operations limiting the movement of rail and/or road traffic
    - Flashing lights and audible warning systems that are activated prior to any movement occurring
    - Warning signage
    - All workers are inducted into working in the maintenance locations and records kept – the induction covers the train movement warning systems and signage in place

When rail traffic approaches a workgroup protected by a lookout/s

Rail Traffic Driver

- sound one long whistle

Lookout

- warn workers of approaching rail traffic

Workers

- move to a safe place
- warn other workers of approaching rail traffic
- acknowledge warning of lookout
- acknowledge rail traffic whistle by raising arm upright above the head

Lookout

- if workers do not clear the track, attempt to stop the rail traffic
- acknowledge rail traffic whistle by raising an arm upright above the head

Rail Traffic Driver

- if acknowledgment is not received from the workgroup continue to sound rail traffic whistle and attempt to stop the rail traffic

When rail traffic approaches workers walking in the Danger Zone

Rail Traffic Crew

- sound one long whistle

Workers

- move to a safe place
- acknowledge rail traffic whistle by raising an arm upright above the head

Rail Traffic Crew

- if workers do not move clear of the track, attempt to stop the rail traffic

9.4 Rail Traffic Whistle Messages - No Radio Communication Available

When radio communication is not available, some messages may be transmitted by rail traffic whistle codes.

When necessary to tell the Officer in Charge rail traffic is delayed at a signal

Rail Traffic Driver

- sound one long whistle
- if necessary to recall a rail traffic crew member to the locomotive/power unit
  - sound three long whistles

9.5 Rail Traffic Whistles - Railway Track Signals

When rail traffic runs over railway track signals, the railway track signal sensing device fitted to some locomotives is activated automatically. The locomotive rail traffic whistle sounds as a warning to the rail traffic crew and workers in the Danger Zone.

When rail traffic runs over

- one railway track signal, the locomotive sounds one continuous whistle until reset
- two or more railway track signals, the locomotive sounds a continuous series of short whistles until reset

9.6 Failure of Rail Traffic Whistles

If the rail traffic whistle fails on a locomotive or power unit working rail traffic, the rail traffic may continue at controlled speed to the nearest depot station where repairs can be affected. The Network Control Officer must be told of any failure.